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PRESIDENTIAL ADDRESS

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WASHINGTON, D. C.

IF BREVITY be the soul of wit, it was badly mauled during yesterday's presentation before the Academy of legislative proposals now in the offing! The following presidential address, required by custom of the Academy, shall be characterized by the presence of that soul even though lacking the corpus which is its normal habitat.

It usually gives one a pleasurable sensation to hear or read something nice said about his profession, such as the sentiments expressed by Robert Louis Stevenson, who knew intimately both the heights of literary achievement and the depths of physical misfortune, during which he learned much of medicine and more of its disciples. Of the latter he writes:

"There are men and classes of men that stand above the common herd; the soldier, the sailor and the shepherd not infrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule."

Without assuming for our Fellowship any spirit of egotism or of self-praise, we believe that the specialty of pediatrics together with its adherents may, in the broad field of medicine, more especially merit the attribute ascribed by Stevenson to workers in the healing art.

There is an intangible something about pediatrics and pediatricians which seems to place upon both the stamp of humanitarianism with more than a modicum of professional gentleness and gentility. Perhaps it is a reflection of the engaging frankness and honest amiability of children with whom we work, who are inherently blessed with the joy of living and who may infect us in turn with a measure of good cheer and optimism.

We may credit our specialty of pediatrics with a degree of altruism not exceeded and rarely equaled by any other specialty in medicine.

You, and your antecedent founders, many of whom have passed to their last reward, have builded soundly and intelligently a structure of preventive medicine which should prove a model for all whose efforts are to reduce rather than to relieve ill-health.

Periodic health examinations are to you so commonplace and bulk so largely in the scope of your practice that some days may pass when you are even

denied the function of healing the sick, while you romp through the green pastures in which you assist and watch fascinating young saplings go through their paces of growth and development. One might even say that the scope of pediatrics is greater in health than in disease.

The social aspects of pediatrics have long engaged your interest, even latterly occupying an important space in the scientific columns of the official organ of the Academy, the JOURNAL OF PEDIATRICS.

Your many and diverse committees have continued to function successfully amid the vicissitudes of war, although at times their work has been limited by absence of members and pressures of civilian demands.

Time must limit the mention of all the activities of the past year, but the work of certain committees demands especial reference.

The Committee on Governmental and Medical Agencies under the chairmanship of Dr. Stanley Nichols has enlarged its scope to include certain collaborators from the American Medical Association, the Children's Bureau, and the United States Public Health Service. Its functions will no doubt broaden much in the future because of the present and contemplated participation of government in the practice of medicine which may expand to an extent not now predictable. Already the committee is engaged in aiding the Food and Drug Administration of the Department of Agriculture in devising ways and means of protecting children from the use of harmful drugs exploited through improper labeling and advertising.

The Committee on Immunizations and Therapeutic Procedures, under the chairmanship of Dr. John Toomey, periodically revises its publication, which has become one of the Academy's best sellers to many organizations and medical schools, aside from its distribution to the membership.

The Committee on Pan-American Scholarships, Dr. Henry Helmholz, chairman, continues to bring to this country bright young pediatricians from our sister republics to the South who, in turn, disseminate the newer knowledge of pediatrics on their return to their native countries, wherein they form the cells and nuclei which make for growing interest in the Academy and for extension of its membership among all of the Latin-American Republics.

We should be most remiss should we fail to mention the Committee on Geographical Distribution of Pediatricians. Although long in name, this committee is short in numbers, having but one member, Dr. Otto L. Goehle of Ohio. The solo feat of this one-man committee, which should serve as a stimulus to committeemen and committeewomen who share their burdens with others, was the production of a report and atlas upon all the practicing pediatricians in the United States, by State and by individual locality.

Dr. Goehle has studied and charted the population in the States, its increase in a five-year period, the total number of physicians per State, of Fellows of the Academy, and of Diplomates of the National Board—a stupendous piece of work which should prove of great value to our postwar committee in its present researches and should receive our grateful appreciation.

The Committee on Liaison with the American Legion, with Dr. Edward C. Mitchell as Honorary Liaison and Dr. Hugh McCulloch as Chief Liaison Officer,

has actively renewed its cooperation with the Legion. Miss Emma C. Puschner, the indefatigable executive of the Legion's Child Welfare Division, has directed much of her time and remarkable energy to cementing closer relationship between the Legion and the Academy.

Dr. Irvine McQuarrie, chairman of the Committee on Post-War Courses in Pediatrics, had scarcely embarked on an extensive study and survey of the facilities for aiding returning veterans when the sudden termination of the war precipitated a crisis which the committee has worked assiduously to meet. The Academy's central office is now equipped with space and secretarial help to offer every aid possible to veterans now or about to be released, who are thirsting to refresh their minds through clinical experiences in pediatrics. Unfortunately, the number of residencies available for those who seek them, especially veterans whose training in pediatrics has been interrupted, has been limited, but concentrated "refresher courses" are now being formed to meet the needs of many.

In this connection, it is stimulating and encouraging as we look into the future to realize that our specialty of pediatrics still has the ability to woo the interest of young physicians who have spent the last few years solely in the environment of adult medicine and surgery.

You will have heard in detail the report of progress being made by the Committee on Post-War Planning under the chairmanship of Dr. Warren R. Sisson, which is now fortunate in possessing as its executive director a Fellow of the Academy, Dr. John P. Hubbard, who brings to it not only the experience of a skilled pediatrician but that of an administrator as well. The original budget of $8,000 appropriated by the Executive Board to initiate the postwar study was generously matched by an equal amount through the good offices of Mr. A. L. Rose of the Mead Johnson Company to whom we would express our grateful appreciation.

In accordance with the request of the Academy for aid and cooperation in the survey and study being conducted by this committee, Dr. Martha M. Eliot, Associate Chief of the Children's Bureau, assigned Dr. Katherine Bain, Director of the Division of Research in Child Development, to lend assistance. Dr. Bain has devoted practically her whole time to the work at hand, having been largely instrumental in the formulation of the detailed schedules concerned with the investigations now in progress.

We would express our deep appreciation, also, to Surgeon General Thomas Parran of the United States Public Health Service for his generous assignment of Dr. Charles Williams, Jr., and Dr. Joseph Lachman to whole-time service as aids to the committee, aside from designating other skilled members of his staff in the capacity of consultants and analysts of the material produced by the study.

The instant and wholehearted assistance of these two Federal departments represents a contribution of expert help, far beyond the monetary values involved in the utilization of their services, and receives from the Academy its deepest gratitude.

At the invitation of the president of the American Board of Pediatrics, composed of three members appointed by the American Pediatric Society, the Section on Pediatrics of the American Medical Association, and the Academy of Pediatrics, we had the privilege of attending as an observer the last examination conducted in Atlantic City in early December. This occasion was one of great interest to me as I was impressed with the fairness and justice displayed by each and every examiner, who sought to become *en rapport* with the examinee by a sympathetic approach which endeavored to place the candidate at ease as best one could under rather hypertonic circumstances. The scope of the questioning was such as to bring out beyond peradventure the qualifications of a candidate for certification as a diplomate of the Board.

It is with especial pleasure that the Academy welcomes back its many members who served their country in the Armed Forces during the war. Many of them at great personal sacrifice answered the call of duty in this and in foreign lands. To them we would give every acclaim and felicitation within our power to bestow.

We would take this occasion to express our heartfelt appreciation of the aid and loyalty accorded us during our term of office by the officials of the Board, especially by Secretary Grulee, the Regional and State Chairmen, and by the membership of the Academy at large.

In the past, your officials who are ever-solicitous for the interest of pediatrics and pediatricians have endeavored to play the part of conciliators and peacemakers in any controversies arising with certain branches of the Department of Labor, which recognizes conciliators as necessary adjuncts to the amicable solution of disputes.

Your officers, in the role of peacemakers, always a dangerous occupation, have occasionally been belabored from within the Academy ranks for being asleep on the job; as being guided by emotion and as failing to present vigorously the viewpoint of the Academy; as always speaking in a destructive and not in a constructive way; and as precipitating "brawls" of various kinds. From officialdom, we have been criticized for speaking out of turn concerning the sentiments you commonly and as a majority embrace; for presenting viewpoints which should be left to the Academy to express; for rushing into print and by implication, at least, that our criticism of a government bureau would have been far less drastic were it largely staffed by men instead of women. That such a sentiment should even be entertained reflecting on the inherent gallantry of any pediatrician, God forbid!

Your officials have devoted much time and effort toward peaceful and conciliatry solutions of differences arising with governmental agencies. In some they have been successful, in others their frustrations have been as many as those of which Freud writes, but we are "soothed and sustained by an unfaltering trust" in the promise of ancient Scriptures that: "Blessed are the peacemakers for they shall be called the children of God"!

THE MOVEMENT IN MEDICAL ECONOMICS

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TO THOSE who would study a social movement, the panorama of episodes and events in medical economics offers abundant material. The roots of the movement reach deeply into a century and a half of history; they are solidly imbedded and draw their substance from two great achievements of man.

Both achievements are described as "revolutions." The one, the Industrial Revolution, resulted from man's success in harnessing inanimate power. It has brought untold benefits but it has brought, also, acute problems of adjustment. At the very core of these problems is the adjustment to the need of *earning* a living rather than *making* a living—the process of transforming work into a medium of exchange in order to secure the goods and services necessary to a satisfactory existence. And out of this there emerge the problems of and the emphasis upon "security."

The other revolution, the Medical, resulted from man's success in the organization and the refinement of the medical sciences. Out of this process, defined as Research, have come enormous benefits and, likewise, acute problems of adjustment. Primarily, the questions here concern the ways and means of utilizing the abundant products of science. The two revolutions touch at many points but it is at this one that they become indivisibly joined to produce the problems, the research, the principles, and the practices of medical economics.

As a complementary statement it should be emphasized that neither the Industrial nor the Medical Revolution shows signs of a diminishing tempo. The current happenings, therefore, must be viewed not as distinct incidents in medical economics but as related episodes that portend continuing events.

Look back over the span of a decade. Compressed within the short period is a series of notable medical economic phenomena. All of them express either the need or the demand of larger or smaller groups of the population for the benefits of the health sciences.

Sharply outlined against the depression has been the relatively enormous growth of services for the less-favored groups of the population. Farm Security, medical relief, widows, orphans, the crippled, the aged—these are certain of the categories for which plans and programs have been developed. The categories are old; the semblance of a more orderly national, state, and local approach toward solutions is new.

For the more favored population groups—those that are self-supporting—the variety of plans almost defies any orderly arrangement. They number into the hundreds and include Blue Cross and other hospital programs, those sponsored by medical societies, those offered by insurance companies and the many other plans sponsored by government, by industry, by medical groups or by consumer groups.

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Viewing the development as a whole certain significant features become evident. Whatever may be the differences between plans all present one characteristic that is common. All present an easier form of payment for the services that are included in a given plan. This feature, combined with the evidence obtained from public polls and the better evidence of the response to the plans themselves, indicates what is the primary public interest in medical economics.

The other significant aspect involves the trend that marks this development of a decade. With only minor exceptions the plans offered to the public are of a limited type. The limitations present many variables that relate to services, to geography, to age groups and others. The trend, however, is toward the reduction of limitations and this trend may be interpreted either as a response to public demand or a growing recognition of public need.

These observations of significant features lead to the conclusion that the movement in medical economics is toward prepayment or a form of pooled payment for what, ultimately, will become comprehensive health services. Viewing incidents or episodes it might be concluded that the movement is a chaotic one but, viewing the whole over a period of time, all of the episodes fit into a rather orderly pattern. Prepayment is linked to the problem of security in earning a living; comprehensive services are joined to the problem of distributing the abundance of science. And whether it be a medical society plan, a Blue Cross plan, a Pepper bill or a Wagner-Murray-Dingell bill the pattern of purposes does not change.

The evolution of professional attitudes toward medical economic problems in the United States presents some impressive changes. The principle of prepayment was the first issue. The principle was opposed, then its application was approved on a localized basis, then the approval was expanded to a state-wide program and now the principle of an interstate or national health plan under professional sponsorship is under consideration. And, at the same time, consideration is being given to the inclusion of more comprehensive services. Again, the pattern of action conforms.

The chief issue in the United States today is not prepayment; it is not the question of comprehensive services; nor is it the question of a national health program. The issue is the organization and administration of a national health program—a program with either limited or comprehensive services and population coverage; a program that utilizes the principle of payment from a pool of funds for whatever services are included. It is regrettable, therefore, that so much passion is exhibited on secondary questions and so little energy is expended on the problems of organization and administration.

Any national health program, whether it be voluntary or compulsory, will face problems of organization and administration. The first problem involves the maintenance of a reasonable balance between the responsibility and the authority granted to the central agency. If the responsibility for making a system work is weighty, so must be the authority. If administration is to develop as an orderly procedure, guiding standards and rules and regulations must be adopted. It is true that administration calls for a certain degree of flexibility and a reasonable balance between central and local authority. The tendency, however, is to concentrate attention upon the danger of central authority. Too

often is it forgotten that the one element that can wreck a national health program as quickly as arbitrary central authority is irresponsible state or local authority which, insisting upon autonomy, refuses to adhere to the agreement of the majority. Whether the central agency is that of a voluntary health plan, a Children's Bureau or a United States Public Health Service the principle of balanced responsibility and authority holds.

A second major problem concerns the adequacy of payment. Usually the discussions of this question involve both the amount and the form of payment. In recent years there has been a broad education on the subject of price controls —of price "floors" and price "ceilings." As is natural, perhaps, the buyers of goods or services insist upon price ceilings; the sellers, upon "floors." But there is also the general realization that for the public good neither buyers nor sellers should be given the uncurbed privilege of establishing only a ceiling in the one case or a floor in the other. And in this connection careful consideration should be given to any proposal to establish a "means test" for any large percentage of self-supporting people. Whether it is called a means test or concealed in a cash indemnity system is a minor matter as far as public reaction is concerned. "Cash indemnity" is that form of payment that establishes no ceiling and is an invitation to added charges. It violates the very principle of prepayment.

Inevitably the issue of payment for services raises the question of controls. It is one of the unfortunate results of misunderstanding that control devices are interpreted as attacks upon integrity. Yet without some control of the minority —be it a minority among subscribers, physicians, hospitals or other personnel or agencies—the economic solvency of any national health plan is endangered. To say that if there are more services than funds, the funds will be prorated evenly is to lean upon a weak device. Its one certain result is a series of questionable increases in rates or costs. Or, to say that, if solvency is endangered, levies of fees or partial fees may be made upon patients, likewise dodges the issue of control.

Adequate administration calls for adequate control in the interests of the great majority of physicians, of hospitals, of patients. In devising measures of control one principle must be emphasized—the measures must not be burdensome or irritating to the majority for whom no measure is needed.

Attending the consideration of the forms of payment there is much confusion because of the mixed motives and purposes that underlie many of the discussions. The forms are described, usually, as fee-for-service, capitation, salary, or any combination of the three basic types. Payment "per case" is a variation of the fee-for-service and payment "per clinic session" is a variation of salary.

If ease of application and assurance of solvency were the only considerations, payment on a per capita basis or by salary might appear to be the choice of the administrator. The arithmetic of each presents itself as a simple multiplication without any problem of last-quarter deficits. On the other hand, the average physician looks with disfavor upon a form of payment other than the fee-for-service. The method is within the framework of his experience; he accepts and supports it against a change to something which is unfamiliar.

Since only passing references are made to salary payments the choice for the

general services of individual practitioners appears to lie between capitation and fees for services. The chief source of experience with capitation is the British scheme of health insurance, which provides only the services of general practitioners, excluding maternity services.

Much more discussion of capitation payments for general services in a system that also includes specialists' services is warranted. The method requires a definition of general practitioners' services; it also requires consideration in terms of the existing conditions of American medical practice. Rightly or wrongly, there are no legal curbs to specialization in the United States. Many general practitioners provide surgical, obstetric, pediatric, and other services. Under such conditions many general practitioners might occupy a dual position, receiving a capitation payment for one list of services and fees for another. If it is assumed that special services will be provided only by those who have been certified by the various boards, an analysis of the medical personnel available in a cross-section of communities will dispel the belief. The purpose in stressing these aspects of capitation is to raise the questions of administration and, at the same time, to stress the point that there are very few methods in medical economics that may be painted as either all black or all white. To accept capitation payment without critical analysis is neither more nor less permissible than its rejection only upon the basis of unfamiliarity.

Neither black nor white is payment on a basis of fees for services. This method appears to be the American choice and it should be emphasized again that payment for a defined case—a surgical case, a maternity case, well-baby services over a period of time—is only a variation of the fee-for-service.

The fee-for-service will not work merely because enthusiastic resolutions endorse it. The method has a long history of failure when applied over a sufficient period of time and especially when it is used to pay for general services. It will work only if it is made to work through buttressing it with forthright methods of control. In choosing controls the principle mentioned previously should be applied but, more than this, the controls themselves must have strong professional support as a protection both to the public and the profession.

Closely related to the issues of organization, administration and payment is the quality of the services. On this subject there have been many loose and confusing utterances. Generalizations about quality, like the usual generalizations, display only an impressive cadence.

Too often quality is presented and discussed as though it were a single element instead of one of the most complex compounds. It is a tribute to the Academy that it is now undertaking the hard task of developing standards against which the quality of pediatric services may be measured. None of the committee members or the technical staff will underestimate the proportions of the necessary work.

Quality is a compound made up of many variable components. Obviously physical facilities—hospitals, beds for special types of cases, equipment—present only one of the variables. A second component would include personnel—general practitioners, certified specialists, uncertified specialists, nurses, and others. It is unnecessary to stress the variability of this component. In spite of extreme variation it is relatively easy to obtain information on these aspects of

quality. Out of such studies conclusions may be drawn on the distribution and possible adequacy of physical facilities and their utilization. Likewise conclusions are possible concerning the distribution of personnel and the utilization of their varied services by all or a portion of the population. But too often the attempts to establish standards of quality stop at this point—the point at which the analysis of the dynamic aspects of the subject might start.

In a specific case the quality of the service that may be rendered is related directly to the physician's scientific knowledge. Therefore, any study of the potential quality that may be available must include an evaluation of this knowledge, measured against an acceptable standard. At the same time, it is recognized that a gap may exist between what the physician knows and what he applies. The factors responsible for the gap call for critical analysis.

This sequence of steps indicates the necessary content of anything approaching a conclusive study of quality. Only a few such studies have been made, but each one serves as weighty evidence of the need for more. The studies of maternal mortality, on an individual case basis, by the Academies of Medicine in New York and Philadelphia are good examples. And two other studies made in Michigan produced significant results. One was a study of the postgraduate needs of general practitioners in which the knowledge of the physician was related to his year of graduation from medical school and his efforts to acquaint himself with the advances in medicine. In this study 438 physicians divided into groups that were graduated in 1910, 1920, and 1930 submitted to an examination and each gave information concerning his postgraduate efforts.

The other study, under the Committee on Maternal Health of the state society, was an analysis of the quality of the maternal service received by over 10,000 patients delivered in a period of three months. The data were obtained from the physicians who attended the births; it was a study of the practices applied in obstetrical cases, and those practices were measured against standards that were adopted by the Committee.

This stress upon the methods of arriving at a conclusion on the subject of quality shows the fallacy of direct comparisons, because of meager knowledge, between this country and others, or between two or more areas in this country. No comparison of any type will be productive except, ultimately, the comparison between what service is rendered and what service should be rendered. In short, the study of quality is valuable only as a preliminary step to improvement. And improvement calls for an emphasis upon basic training and effective postgraduate education as well as an attack upon the social and economic obstacles to the highest quality of service.

The movement in medical economics may be described as one that has breadth, depth, and speed. It is the last characteristic, speed, that makes a concentrated attention to the methods and problems of administration so vital. Only a few of the problems have been described, but enough has been said to show what is the greatest need of all, the need of dispassionate analysis. Nothing is gained and precious time is squandered by the confusion of personalities with principles and by the tendency to think in terms of absolutes. The movement calls for more than that; it lends itself to objective scientific consideration; it demands and deserves objective consideration by scientists.

FACTS AND FIGURES IN PEDIATRIC MEDICINE

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MEMBERS of any profession are interested in tools, techniques—the ways and means by which they can better themselves. Statistics giving techniques for interpreting and thus using the facts and figures issuing as data from professional activities is a very powerful tool in the hands of the profession equipped to use the tool intelligently. In developing this paper I am endeavoring first to present to you facts and figures which are of interest to pediatricians and second to give you insight into the most frequently available techniques, illustrating whenever possible how each of you as professional men are entitled to use and can actually use statistics even in the everyday routines of your profession.

Pediatricians can measure the growth of their profession by comparing the ten principal causes of death in 1900 with the ten leading causes of death in 1940 (Chart 1). Aided by clinical and laboratory researches which have developed drugs and methods for controlling many of the hazardous communicable and infectious diseases, members of the medical and related professions have seen diphtheria, diarrhea, and enteritis removed from the list of leading causes of death; have seen influenza-pneumonia and tuberculosis sharply losing rank positions in the list of principal causes of death, dropping from first and second positions in 1900 to ranks of 6 and 7, respectively, in 1940.

The statistics in Chart 1 are rates per 100,000 population which, as you know, are derived as follows: using the number of deaths from each cause for each year obtained from the death registration certificates in the rate formula:

$$\text{Death rate by cause} = \frac{\text{Deaths by cause}}{\text{Population}} \times 100{,}000$$

The population is the estimated July 1 population for 1900 and 1940, respectively. Bar charts are used, representing the independence of the causes of death. Attention has been given to the changing size of the Death Registration Area from 1900 to 1940 by the use of the original death registration states shown at the bottom of the chart.

Many of the rates used in subsequent illustrations are specific, that is, are limited to the deaths occurring in specific age groups of the population. Of course, the population base has been the number of children or persons in the respective or limited age groups for which the descriptions are given. The rheumatic fever death rate of 5.1 per 100,000 for children (from 5 to 9 years of age) is an age-specific death rate for rheumatic fever. Specific death rates are refined measures of the mortality risk which different segments of the population take. Some of the changes in leading causes of death from 1900 to 1940

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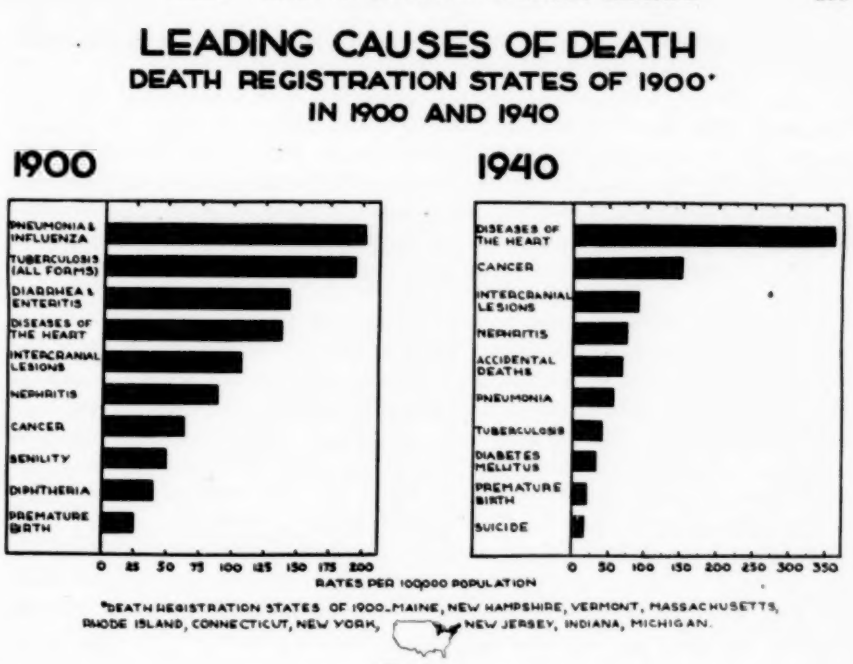
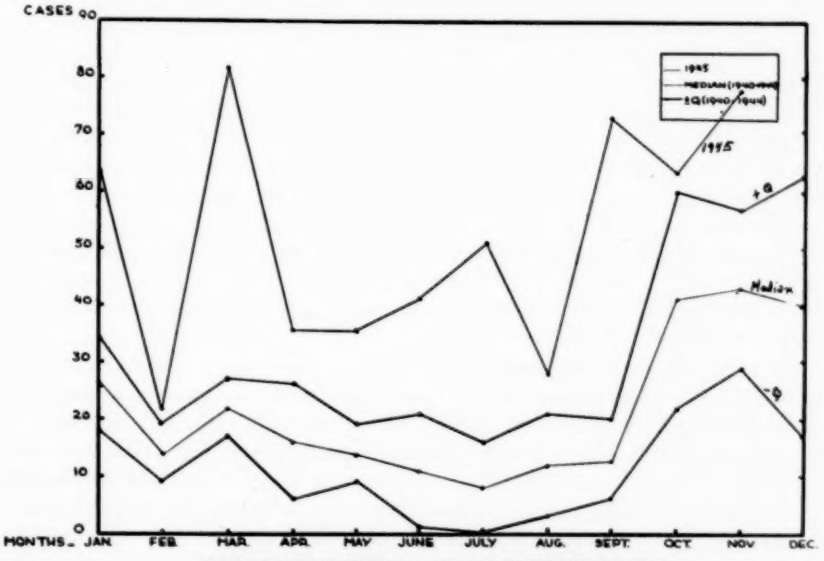


Chart 1.



DIPHTHERIA IN MICHIGAN

(1940-1944) TREND AND 1945.

Chart 2.

not only measure progress in sanitation and preventive medicine, but also reflect the risks of an aging population.

Too often a favorable trend lulls a public and even a profession into complacency. The story of diphtheria in 1945, as told by the chart "Diphtheria in Michigan" (Chart 2) illustrates all too vividly this apathy. In 1945 diphtheria came to prominence through rapidly increasing numbers of cases, the increase exceeding the boundaries of expectancy definitely forecasting trouble. Members of the medical and public health professions have tried valiantly to arouse the trusting public to an awareness of the danger necessitating added protection such as is afforded by the booster dose given now to children who were immunized earlier in their life. Diphtheria can be controlled.

The statistics used to determine the boundaries for the diphtheria cases are relatively elementary. The line with the bands above and below, or average line, connects the median number of cases for each month over the five-year period 1940-1944. The January cases reported for each year of the five-year period are 40, 27, 26, 26, 25, respectively; thus giving a median of 26 cases for the average expected January incidence based on the five-year experience, 1940-1944. The ± Q boundary lines, those drawn equally distant above and below the median line, connect in succession the monthly quartile points, or the Q_1 and Q_3 points which for January are roughly at a distance of 7 cases on either side of the January median. This 7 is a crude expression of the January quartile deviation and has been found by the computation $\frac{40 - 25}{2}$. Just as the January quartile points were found, so have been derived the Q_1 and Q_3 values for each of the succeeding eleven months.

Since the cases reported in a given month in a given year are just a sample of the cases reported for the same month in other years, provided the diphtheria program continues under like conditions, the 1945 monthly incidence drawn as the top line should have fallen within the ± Q boundaries, that is, within the limits which chance fluctuations inherent in sampling would allow on a 50-50 basis. But at no month in 1945 has Michigan reported diphtheria cases within the boundaries set by the chance fluctuations inherent in sampling. The medical and related professions as well as the lay public can rightly be disturbed by diphtheria as it is occurring in Michigan in 1945. It is not chance that makes the 1945 top line fall so consistently above the expected incidence. Diphtheria in 1945 in Michigan is a real problem.

The prevalence of rheumatic fever in our young people is too often an unrecognized fact. Even the known fact that rheumatic fever mortality rises with age throughout childhood, having death rates of 5.1, 8.6, 9.3, and 10.2 per 100,000 children in successive five-year age groups beginning with the 5- to 9-year age group, is just beginning to arouse the public and to stimulate members of the medical and related professions to greater activity. Rheumatic fever is closely related to chronic rheumatic diseases of the heart and contributes to mortality from diseases of the heart (all forms). In 1940 deaths assigned to heart as cause accounted for 18 deaths in each 100,000 infants; took 4 lives out of each 100,000 preschool children; and increased the toll to 8 in each 100,000 school children.

Let us look at some of the diseases in the control of which you know that you have made progress—diseases which may or may not have ever appeared as principal causes of mortality in the total population but which are still definite hazards to childhood, to those age brackets of a population in which the pediatrician concentrates his efforts. Even though scarlet fever mortality dropped from nearly 10 deaths per 100,000 in 1900 to a mere ½ death per 100,000 population in 1940, scarlet fever is still a hazard for the preschool child 1 to 4 years of age. Maximum scarlet fever mortality in 1940 occurred in this age group. Like scarlet fever, diphtheria in 1940 reached its peak mortality rate—9 deaths per 100,000—in the age group 1 to 4 years. Although more than 300 babies out of each 100,000 in 1900 lost their lives because of whooping cough, even in 1940, 100 babies in each 100,000 were being sacrificed to this cause. After 3 or 4 months of age the baby can be protected against pertussis.

Gross mortality in 1940 for tuberculosis of the respiratory system has been reduced to ¼ of the 1900 experience. But the pediatrician sees his charges die from tuberculosis: in 1940, out of each 100,000 children in their respective age groups, tuberculosis claimed 11 babies; 5 preschool children; 4 school children 5 to 14 years of age; and jumped up to 36 in the next ten-year bracket.

If dysentery deaths occur, expect them in the baby—51 deaths per 100,000 infants in 1940 were charged to this cause. But protect the preschool child also, for in 1940 seven out of 100,000 lives in this group were lost by this cause. But the diarrhea and enteritis story is more dramatic. In 1900 nearly 4,500 out of each 100,000 babies died from this cause; in 1940 this rate had dropped to a mere 400, serious enough to lose one baby in 250 to causes like diarrhea and enteritis. Even appendicitis, another cause falling in the category of digestive disturbances, claimed the lives of 7 to 8 children per 100,000 in 1940. In that same year 41 babies in each 100,000 died from intestinal obstructions.

All pediatricians recognize the risk of measles mortality which a baby incurs if he is unfortunate enough to have the exposure. Nine infants in each 100,000 died because of measles in 1940; more than one-fourth of all measles deaths in 1940 were contributed by the infants. Although the measles mortality rate was only 4 per 100,000 in the age group from 1 to 4 years, the preschool children accounted for nearly 50 per cent of all the measles deaths. When you think of an average of 400 cases of measles reported for each measles death registered, even in 1940 the pediatricians saw considerably large numbers of measles cases.

Closely linked with measles as sequellae are the respiratory diseases, such as bronchitis, influenza, and the pneumonias. In 1940 between 900 and 1,000 in each 100,000 children under 1 year lost their lives because of respiratory disturbances. Of the 70 deaths in each 100,000 children from 1 to 4 years of age, bronchopneumonia contributed 29; influenza, 14; and bronchitis caused 4 deaths.

Believe it or not, children do die from nephritis, an ailment commonly linked with the aging process. In 1940, 7 babies out of each 100,000 died as nephritis deaths; 4 preschool children in each 100,000 from 1 to 4 years of age, and 3 out of each 100,000 children from 5 to 14 years of age lost their lives because of nephritis. In that same year, syphilis accounted for the lives of 62 babies in each 100,000 infants—the age group having the maximum syphilis mortality.

The only age groups with death rates in 1940 exceeding 1 per 100,000 for mortality from cerebrospinal meningitis were those under 1 year, having a rate of 7, and those from 1 to 4 years of age, with nearly 2 deaths per 100,000. In 1940 the maximum poliomyelitis mortality occurred in the infant group which contributed a rate of slightly more than 2 deaths per 100,000. Children under 15 years contributed approximately 60 per cent of the total poliomyelitis deaths on record for 1940. With an average of 10 cases reported for each death registered, in 1940 there probably were nearly 6,000 recognized cases of this disease in children under 15 years of age. Poliomyelitis was an important problem for pediatricians in 1940.

If the pediatrician takes over the care of the baby from birth, then some of the facts and figures surrounding that birth are of interest to the profession. In 1940 nearly 30 per cent of infant deaths were charged to prematurity. If Wisconsin's 1944 experience—which is probably lower than the nation's average—of a 20 per cent case fatality rate for premature births holds, that is, if 1 baby dies out of each 5 who are born prematurely, then the obstetricians placed in your hands in 1940 more than 160,000 prematurely born babies.

I wish I knew how many congenitally malformed babies are born alive. True, nearly 85 per cent of all deaths charged to congenital malformations occur under 1 year of age; yet enough congenitally malformed babies live on to produce deaths from that handicap in every age of life—even in the 75 years and over bracket some congenitally malformed individuals failed to live longer because of their handicap. Not only are these individuals a medical problem, but also they become a very real social problem.

Perhaps similar comments might be made on injuries at birth. Some babies die as a result of injuries at birth at every age in the first year of life. It is conceivable that babies with injuries at birth survive past the infancy period to become both medical and social problems in later life.

So much for the infant who, if he has had proper postnatal care as well as prophylaxis against smallpox, diphtheria, pertussis, and possibly scarlet fever, reaches the preschool age as a relatively safe risk against mortality. Gross death rates are low for children from 1 to 4 years of age fluctuating around 3 per 1,000. But findings from the National Health Survey[1] indicated that the sample of preschool population surveyed showed 1 preschool child in every 4 had had some disabling illness during the twelve-month period covered by the Survey. This illness rate was lower than the 3 in 10 rate for the beginning school children from 5 to 9 years of age and higher than the illness rate of 153 in 1,000 for the children in the succeeding age bracket, 10 to 14 years. The length of the disabling illness for the 1- to 4-year age group was high but not as high as that for children from 5 to 9 years of age.

The illnesses which contributed to the 10 leading causes of death in 1940 of the children from 1 to 4 years of age and which are of concern to the pediatricians include: influenza and pneumonia; diarrhea and enteritis; tuberculosis; whooping cough; diphtheria; diseases of the ear, nose, and throat; and appendicitis. Gross mortality reaches its lowest rate, approximately 1 death in

each 1,000, in the age group, 5 to 14 years. The five leading causes which contributed to this low mortality rate were in 1940: accidents other than motor vehicle, followed by motor vehicle accidents, which account for the two principal causes, thus stressing the dangers of the increasing scope of activities engaged in by school-aged children; pneumonia and influenza; diseases of the heart; and appendicitis which emphasize the increasing risk to infection accompanying increasing contact with large numbers of people.

According to the National Health Survey[1] the highest rates for the disabling illnesses of childhood were those for the acute childhood communicable diseases: chickenpox, measles, and whooping cough; and for the acute respiratory infections. In surveys made in the eastern cities it was found that cardiac lesions, probably resulting from rheumatic fever, show an incidence as high as 4 in 100 children between 12 and 14 years of age. The toll from cardiac lesions begins to be felt in youth from 15 to 24 years of age, for whom deaths assigned to diseases of the heart take third place in the list of leading causes of mortality. At ages 5 to 24, death rates per 100,000 for rheumatic fever attain an average of 9 for girls and 8 for boys, and, with deaths from heart disease, account for nearly 15 per cent of all fatal diseases in young people.

Rejections for valvular heart disease, according to recent selective service statistics, reached a rate as high as 53 per 1,000 men examined. Nearly one-third of the rheumatic fever patients admitted to Philadelphia hospitals from 1930-1934 were between 5 and 10 years of age at first attack; New Haven Hospital and Dispensary records show the peak at 7 and 8 years of age for first attack. In the etiology of this disease it is important to note the relationship of the course of the incidence of this disease to the incidence of hemolytic streptococcal and other respiratory illnesses. It has been shown that crowding in homes is closely related to the incidence of this disease; that acute episodes reach a peak in spring. Clinical experience shows that a high per cent of deaths from heart disease for ages 5 to 24 can be attributed to rheumatic fever.

Much emphasis has been given to rheumatic fever in the hope that as pediatricians you will exercise control through early case findings and careful records and be stimulated to do some individual research: clinical, statistical, and epidemiological in the study of this baffling disease of youth.

Individual and group research is necessary for a profession, giving members an instrument not only for evaluating their own practice and for interpreting reported experiences of their colleagues but also for advancing the sum total of knowledge of the entire profession. The techniques in statistics offer powerful tools to research in any field.

The collecting of comparable, adequate, accurate and pertinent data is a prerequisite to any statistical analysis. A great deal of time and thought should be given to this phase of problem solving, because the end results or findings will never be any better than the original material on which the observations were made. In evaluating reported researches of your colleagues, you judge the findings not only by the integrity of the man through his established reputation, but also by the organs carrying the publications. In like manner you should recognize the inestimable value to yourself and colleagues of careful

personal study of the efficacy of the drugs advertised and circulated by the manufacturers of those products. True, most alert concerns accompany their advertisements by abstracts of researches showing the benefits of the use of the drugs. But you should be able to use some of the simplest statistical tools in order to be critical of reported results; and at the same time by watching results obtained in your use of the materials you can judge whether you can accept at their face value the findings of the efficacy of advertised products.

In other words you can always ask the questions: How good is this observation? How often can these results be found just by chance in material of the assumed composition? What can you expect to get as your results under like conditions; that is, what estimate can you make from the findings of the reported observation or sample?

Answers to these questions are found in the statistics of probability. A great deal of reliance can be placed on estimates even from small samples through the application of chance variation as given in statistics by what is known as tests for statistical significance. Time is limited, prohibiting a consideration of some of the basic principles in sampling and allowing an opportunity of presenting very briefly with illustrations only the most useful as well as simplest of these tests for statistical significance.

The probabilities or chances given in the interpretation of the use of the tests can be found in handbooks of probability tables such as: Areas under the normal probability curve; the X^2 and t tables of probabilities. The probabilities of the occurrence of chance in accordance with the Mendelian ratios are also available for combinations of successes and failures based on numbers of cases varying from $N = 1$ through $N = 50$. These tests are mandatory in any critical evaluation of results derived from small samples and should be applied to findings based even on large samples. Statistically a sample is usually considered small if it contains less than 50 cases and is certainly considered small if it contains 30 cases or less. The size of the sample is not necessarily indicative of a good sample. Small samples and large samples have value only when their contents are comparable. An experiment on 5 animals, comparable with respect to possession or absence of the factors known to be forces which condition outcome, is worth infinitely more than a large sample of 50 or more animals about whose comparability the experimenter has little or no knowledge at all. There is a value in comparability in small samples which often cannot be obtained in large samples. I am stressing here the critical selection of original source material.

In the use of any of the tests for statistical significance, please bear in mind that these tests, like your clinical tests, are designed for specific purposes and will do no more than what they are designed to do. Their use in no way can compensate for shoddy observations. Through their application, you, as well as the observer, can make allowance for chance fluctuations inherent in sampling, whether the samples are large or small. It is the privilege of the observer and a profession to set the confidence limits as standards of accuracy and safety. It is agreed generally by medical workers that in the field of chance and probability, an error of not more than 5 per cent should be allowed. In

other words, in subsequent illustrations interpretations of chance variations will be made at the 5 per cent level of significance, that level at which the observer is right 95 times in 100 and may be wrong 5 times in 100.

The statistical constants used in the discussion describe the p and q probability ratio where p is the probability of success or recovery and q is the probability of failure. The formulas are functions of the curve found by expanding the binomial $(p + q)^N$ and are the mean, which is $M = Np$ or Nq, depending on the approach made, recovery or death; the standard deviation or sigma, which is $\sigma = \pm \sqrt{Npq}$; the standard error of the mean which is $SE_M = \pm \frac{\sigma \text{ distribution}}{\sqrt{N}}$; and the standard error of a rate or per cent, which is $SE_{\%} = \pm \sqrt{\frac{pq}{N}}$. Sigma for a small sample has been found by using n instead of N. Small n designates independent items and is N – 1. This technique is important in the description of variability inherent in small samples.

The problems which follow have been selected on the criteria of interest to the pediatrician and the possible use which a professional man can make of knowledge gained in a presentation embodied in a single paper or talk.

The May, 1945, issue of the JOURNAL OF PEDIATRICS[2] carried an article on the use of a single dose of sodium sulfadiazine in meningococcic meningitis. The article was abstracted in *What's New*,[3] a publication by the Abbott Laboratories as a service which this manufacturing concern is giving to the medical profession. According to the research, 8 out of 9 patients suffering from meningococcic meningitis received 2½ grains of the drug per pound of body weight; one received only 2 grains. All of the patients in the group recovered.

The problem sets the question: How good is the 100 per cent recovery, based on the 8 patients receiving comparable doses of 2½ grains? What could you expect to get as your recovery rate, supposing you treated your cases of meningococcic meningitis likewise by using a single large intravenous dose of sulfadiazine? Should you be disturbed if you observed only an 80 per cent recovery and not the 100 per cent reported in this research? In other words, what could an observed 100 per cent on 8 patients be expected to yield by chance under similar conditions in comparable samples? What are the boundaries for the "All or None" results reported on N = 8 patients? By expanding the binomial $(p + q)^8$ for various percentages of recovery, such as 90 per cent, 80 per cent, etc., it can be shown that an observation of 100 per cent recovery on 8 cases could be expected to yield recovery rates as low as somewhere between 65 per cent and 70 per cent at the 5 per cent level of significance. The true recovery rate 95 times in 100, based on an observation of a 100 per cent recovery on 8 cases, by chance alone can be expected to be anywhere between 65 per cent and 100 per cent but is unlikely to drop as low as 65 per cent. So if your experience under like conditions yields an 80 per cent recovery rate instead of the reported 100 per cent you need not be disturbed. The evidence even with the additional pressure of the 100 per cent or *all* indicates as unlikely a drop as low as 65 per

cent; but almost any recovery per cent between the boundaries of 65 per cent and the reported 100 per cent is possible. You would be missing your estimate only 5 times in 100. Tables are available which give the unlikely percentages for various numbers of items in a given sample when the observation on that sample yields a 100 per cent or the converse 0 per cent. Such a table gives the estimates of *true* percentages when samples show a 100 per cent or a zero percentage.

The same procedure with facilitating tables of probabilities can be used to evaluate percentages less than the "perfect" 100 per cent. In 1943 another article on meningococcic meningitis appeared in *War Medicine*[4] with an abstract in *Therapeutic Notes*[5] published by Parke, Davis and Company. Treatment with sulfadiazine or sulfadiazine and serotherapy on 39 patients resulted in only 2 deaths. The observed odds are 37 to 2. With the use of tables an observation of 37 recoveries out of 39 cases indicates true odds lying somewhere between 13 to 3 and 7 to 1. In other words you, as an observer administering the same treatment under like conditions can believe that the true recovery rate can be as good as 80 per cent or better.

If facilitating tables are not available for establishing true odds from observed odds, you can still evaluate how good an observed rate is by using the formula for the standard error, abbreviated S. E., of a rate. Let me illustrate with data from an article on the use of convalescent measles serum. The article appeared in a 1945 issue of the JOURNAL OF PEDIATRICS[6] with an abstract in the July, 1945, issue of *Therapeutic Notes*.[7] The serum was given intradermally in a daily dosage of 0.4 c.c. for five successive injections. Thirty-four of 38 children so treated did not develop measles. The observed escape rate is 90 per sent ± 5 per cent. By the use of the ± S. E. attachment, subsequent samples under like conditions may be expected to yield an escape rate as low as 80 per cent. The probability tables for odds would drop the expected escape rate at the 5 per cent level of significance to almost 75 per cent instead of the 80 per cent obtained by the use of the standard error test.

Another test, the "t" test, is used to evaluate how good is a mean or an average. Observations on blood sugar in 5 infants after twenty-four hours of fasting yield readings of 51, 69, 58, 60, and 63, respectively. The mean is 60.20 ± 2.95. The evidence although based on only 5 cases is good enough to establish a highly statistically significant mean, since by chance fluctuations inherent in sampling, the variation which can be expected in the mean lies within the limits set by the 60.20 and the ± 2.95 attachment. The t value which is the quotient of 60.20 ÷ 2.95 is so large that the chances are considerably less than even 1 in 1,000 for an observer to be wrong when he expects a mean blood sugar content around 60.20 on infants observed under similar conditions, that is, after twenty-four hours of fasting.

The t test is useful in evaluating a mean change, such as is given by the observation of changes in serum protein with ammonium chloride and low sodium chloride diet made on 6 patients. The basic data are given in Table I.

TABLE I. CHANGES IN SERUM PROTEIN WITH AMMONIUM CHLORIDE AND LOW SODIUM CHLORIDE DIET

PATIENT	BEFORE	AFTER	CHANGE
1	6.12	6.57	+0.45
2	6.57	6.92	+0.35
3	7.44	7.93	+0.49
4	7.13	8.28	+1.15
5	5.85	7.47	+1.62
6	7.58	7.79	+0.21

The mean change is .71 ± .25 which gives a t value equal to 2.84; for n = 5, a t value of 2.84 gives a P or probability between two and five times in 100 to be wrong, if on subsequent samples of similiar observations, the observer expects an average change in serum protein within the limits set by the mean and its ± sampling error attachment, that is, within .71 ± .25. The evidence produces a statistically reliable mean.

Another test which is used frequently and which can be applied to both small and large samples is the X^2 or Chi Square test. Data for the illustration have been taken from the November 11, 1939, issue of the *Journal of the American Medical Association*[5] and appear in Table II.

TABLE II. CHILDREN RECEIVING VIRUS BY OUTCOME OF VACCINAL CYCLE

VIRUS	VACCINAL CYCLE		TOTAL	PER CENT
	ACCELERATED	NOT ACCELERATED		NOT ACCELERATED
Culture	17	19	36	52.7 ± 7.9
Calf lymph	29	5	34	14.7 ± 8.1
Total	46	24	70	34.2

The uncorrected X^2 yields a value of 11.2. The corrected X^2 found from the computation

$$X^2 = \frac{\left[(29 \times 19 - 17 \times 5) - \frac{70}{2}\right]^2 \times 70}{46 \times 24 \times 36 \times 34} = 9.6$$

The P or probability for a $X^2 = 9.6$ on n = 1 is much less than once in 100 times. The observer can expect that factors other than chance have influenced the difference in the accelerated cycles in the two groups using the two kinds of virus.

The uncorrected X^2 test value of 11.2 can be obtained through the use of the standard error test for statistical significance of a difference. The computation follows:

Culture virus	52.7% ± 7.9%
Calf lymph virus	14.7% ± 8.1%
Difference	38.0% ± 11.3%

Critical ratio or C. R. $= \frac{38.0}{11.3} = 3.3$ sigma distances at which the observed difference is wiped out completely. From tables of areas under the normal probability curve, the P of occurrence beyond the 3.3 sigma distance is less than once in 1,000 times.

By both tests the professional man would be justified in ruling out chance as an explanation of the observed difference in percentages of acceleration or nonacceleration of vaccinal cycle as evidence in the use of culture virus versus calf lymph virus in smallpox vaccinations. There is much less than 1 chance in 100 for the observer to be wrong in his judgment in assuming an association between the type of virus and the involution of the vaccinal cycle to be due to chance alone. Some factor other than chance accounts for the observed result. It is the privilege of the professional man to accept or reject the evidence as indicative of the greater efficacy in the calf lymph virus in accelerating the vaccinal cycle.

Measurement in medicine is not new; but it is being emphasized through the increasing recognition given to the importance of its use in literature. In June, 1941, Campbell in *Surgery*[9] considered statistical method a vital tool in clinical medicine. In a subsequent editorial on Campbell's article, the *Journal of the American Medical Association*[10] stressed the point: that many clinicians still almost entirely neglect satisfactory criteria of statistical analysis in their scientific writings.

In a recent publication Stieglitz[11] recommends that "every periodical publishing material pertaining to health should have at least a professional medical editorial adviser and censor to ensure against the dissemination of misleading ideas; advertising services could greatly increase public confidence in advertised statements if physicians edited the claims of all food and drug advertisers."

I have tried to point out in this paper how statistics as numerically stated facts describe material of interest to pediatricians; I have tried to give a very elementary exposure of statistics as method, stressing specifically the rudimentary principles of the effects of chance, thus giving you some idea of what conclusions can be reasonably accepted from your own observation as well as those of your colleagues; what results you might expect if you were to repeat your own or the researches of others in your profession. Progress in medicine would be even more phenomenal than it has been in the last decade if ways and means were available to the large number of physicians practicing their profession relatively independently to pool their experiences; if these members had time and facilities afforded to them for evaluating the literature of their profession; and for critically accepting or rejecting the mass of materials affecting them and their public.

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STREPTOMYCIN: A SUMMARY OF CLINICAL AND EXPERIMENTAL OBSERVATIONS

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MOST pathogenic microorganisms do not long survive in the soil, even though they may survive elsewhere under similar conditions of temperature, food, and moisture. The death of pathogens in the soil is often rapid and due to identifiable chemical weapons produced by antagonistic microorganisms which are natural inhabitants of the soil. This concept, which has long been in the minds of such men as Waksman and DuBos, has led to the harnessing of this, another force of nature, for the welfare of mankind. It is difficult for us to imagine the evolution and survival of our race had the soil been a breeding place for contagion, as it once was thought to be.

Chemotherapy is one of the oldest fields of medical endeavor, but the chemotherapeutists of previous generations searched for remedies against disease by making extracts of higher plants. They were successful in discovering valuable and specific chemotherapeutic agents, including quinine and emetine, and such physiologically potent remedies as digitalis and opium. For the past two generations scientists have also been seeking antibiotic remedies from microorganisms in nature. The principles on which modern antibiotics were developed have been known for forty or fifty years and undoubtedly, if these principles had been persistently followed to their ultimate conclusion, penicillin might have been available a generation ago. We have been interested for several years in antibacterial substances which are effective against the bacillus of tuberculosis. By searching the available literature published during the last sixty years we have found references to at least twenty substances of microbial origin which showed some evidence of activity against the bacillus of tuberculosis. In many instances these are truly antibiotic substances as one thinks of them today.

Among the scores of antibiotic substances known, only two have as yet reached what appears to be a stage of practical development for the parenteral treatment of systemic human diseases. These are penicillin and streptomycin. It is the aim of this presentation to review briefly the information which has been accumulated regarding streptomycin during the two years since its announcement in January, 1944.[1]

We have had the fortunate opportunity of studying streptomycin since April, 1944, when a small amount of the material was placed at our disposal by Dr. S. A. Waksman, having been produced in his own laboratory. This amount was adequate to treat only four tuberculous guinea pigs for a limited period, but the results[2] were sufficiently impressive to cause us to visit Dr. Waksman's laboratory immediately in order to discuss these findings and to plan for future

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studies on an adequate scale. The amount of material required for such experiments was beyond the productive capacity of Dr. Waksman's experimental laboratory, but with his help it was possible to enlist the aid of Merck and Company, who supplied streptomycin for earlier experimental problems. Since that time we, in collaboration with Drs. Herrell, Heilman, Nichols, Olsen, and others, have had the opportunity of utilizing between 5 and 6 kg. of streptomycin (5,000,000,000 to 6,000,000,000 S units*) in the treatment of experimental animals and in the treatment of more than 100 patients who had various infectious diseases.

Streptomycin has been found to possess most of the characteristics required of a successful antibacterial agent for the treatment of human disease. It possesses a range of antibacterial action in vitro not paralleled by any other available substance.[3, 4] It may be administered by any of the usual parenteral routes conveniently. While streptomycin is rapidly excreted, the rate of excretion is somewhat less than in the case of penicillin and an adequate concentration may be readily maintained in the blood.[5, 6, 7] Streptomycin maintains its activity in vivo and is active in the hydrogen ion concentration of the fluids and tissues of the human body. It appears to diffuse from the blood stream into most of the tissues.[8] Streptomycin has an unusual property, which may give it some special clinical application, in that it is not absorbed to any significant degree from the gastrointestinal tract. Neither is it destroyed in the lumen of the bowel, but there it remains to exert an antibacterial effect on the intestinal flora, acting especially on the gram-negative bacteria which are normally so abundant in the colon[9] and on several gram-negative pathogenic bacteria which inhabit the intestinal tract in cases of disease. Most important of all is the fact that streptomycin is of very low toxicity for man and the few unfavorable side reactions which have been observed[7, 10] have been attributed to impurities. It now appears that the substance may be produced in commercially feasible quantities eventually and in a sufficiently high state of purity.

The antibacterial spectrum of streptomycin extends into fields of activity not covered by penicillin.[1, 3] It should be clearly emphasized that streptomycin does not appear at this time to be in any sense a substitute for penicillin, but that its action is complementary to that of penicillin. Streptomycin possesses activity against many organisms which are relatively insensitive to penicillin, including a number of pathogenic, gram-negative, gram-positive, and acid-fast bacteria. While accurate predictions of therapeutic potentialities cannot be made on the basis of in vitro observations, experience indicates that antibiotic substances are more likely to retain their in vitro activity in vivo than are synthetic compounds, such as sulfonamides.

In studies on animals it has been found that streptomycin is active in vivo against experimental infections with penicillin-resistant microorganisms belonging to the genera *Salmonella, Pseudomonas, Shigella* and *Brucella,*[11] *Pasteurella,*[12] *Borrelia* and *Leptospira,*[13] *Klebsiella,*[14] and *Mycobacterium.*[2, 15, 16]

*Supplied by Merck and Company, the Abbott Laboratories, the Upjohn Company, Eli Lilly Company, and Parke, Davis and Company.

The possibilities and limitations of streptomycin in treatment in human disease cannot be clearly seen at this time. However, it appears desirable to summarize the known facts which may be of value for guidance of physicians when streptomycin becomes more widely available in the near future than it is at present.

Until streptomycin is produced in greater quantity it should be used only in treatment of those patients for whom a definite bacteriologic diagnosis has been established. Furthermore, studies should be made to determine the actual sensitivity to streptomycin in vitro of the strain of pathogenic micro-organisms whenever these facilities are available. These recommendations are made to conserve the limited supply of the drug and to make results more intelligible than they would be otherwise.

Streptomycin is recommended for trial in treatment of infections of the urinary tract which have proved to be resistant to sulfonamides and penicillin and in which the infecting organism is susceptible to action of streptomycin. Infections which are due to *Proteus ammoniae* or *Aerobacter aerogenes* have responded best.[17] If results are not promptly achieved in a few days with adequate treatment it is improbable that further treatment with streptomycin is indicated. The organisms frequently responsible for such infections may acquire drug fastness, especially if drainage of the urinary tract is defective or other conditions are favorable to reinfection.

Forms of bacteriemia due to organisms sensitive to streptomycin have been successfully treated.[17] Such organisms may have had their origin from the urinary tract and these are frequently not sensitive to other available antibacterial agents.

The effect of streptomycin on brucellosis will require much more extensive study than has been given to it as yet. At this time it appears unwise to utilize streptomycin in treatment of chronic types of the disease or in those situations in which any doubt exists as to the validity of the diagnosis. Brucella bacteriemia has been treated successfully[17] and in this circumstance it is possible to determine the sensitivity of the strain to the in vitro action of the drug.

Streptomycin has shown striking therapeutic benefit in treatment of human tularemia,[18] a result which closely parallels that obtained in treatment of experimental tularemia.[12]

The possibilities of streptomycin in treatment of pulmonary suppurative disease have been under investigation by our colleague, Dr. A. M. Olsen, during the past year.[19] Solutions of streptomycin may be readily nebulized and inhaled[7] or solutions may be introduced supraglottically into the trachea. The drug may also be effective in suitable cases of chronic infections of the respiratory tract when administered intramuscularly.[17] It has appeared that streptomycin should be used simultaneously with penicillin or following eradication of penicillin-sensitive microorganisms in most cases of pulmonary suppurative disease. Such applications of streptomycin require repeated bacteriologic examination of pulmonary secretion. The possibility of utilizing streptomycin in treatment of certain infections of the upper part of the respiratory tract, such as ozena, has been suggested by Herrell and Nichols.[17] They also reported cases in which

peritonitis, cholangitis, typhoid fever, meningitis (due to *Hemophilus influenzae*) and syphilis were treated with streptomycin with variable results.

The first report of clinical use of streptomycin was that of Reimann and others[20] in treatment of typhoid fever. The medical profession will await with great interest further reports on parenteral and oral treatment of this disease with adequate doses of streptomycin because of the great prevalence of the disease in some countries and the lack of other specific remedies.

During the past six years we have made chemotherapy of experimental and clinical tuberculosis our principal research interest. Of the many substances tested in vivo in treatment of experimentally infected guinea pigs, streptomycin appears at this time to be the most promising. When guinea pigs received treatment continuously for about six months,[15] lesions were found to regress in all instances. In 30 per cent of the animals no residual infection with tuberculosis could be detected by most careful histologic and bacteriologic methods and the tuberculin test gave negative results in these animals. The remaining 70 per cent of animals were free of evidences of progressive disease but residual lesions in various stages of healing were frequently demonstrated and tubercle bacilli could be isolated from emulsions of the spleen.

There are many contrasts between the pathologic changes produced in experimentally infected guinea pigs and those which occur in the many types of tuberculosis observed in man. Most important of all, however, is the fact that there are also many similarities and that the organisms responsible for human tuberculosis are extremely sensitive to the bacteriostatic action of streptomycin. We have previously expressed the belief that any effective bacteriostatic agent in clinical tuberculosis will have marked limitations dependent on the handicaps imposed by the pathologic characteristics of the disease.[21] In a preliminary report[10] we observed results consistent with the hypothesis that streptomycin exerts a "limited suppressive effect" on clinical tuberculosis. Further observations on these cases and on other cases in which treatment was subsequently given have yielded similar results and have served to support further our reservations as to the permanence of results in many instances.

In fifty-four cases of tuberculosis the patients have now received treatment with streptomycin under our direction for periods in excess of four weeks. In each instance the disease had shown progressive trends prior to institution of therapy. In twenty-one of these cases the patients had pulmonary tuberculosis and in sixteen cases the disease had attained a far-advanced stage of development. In every instance at least a portion of the tuberculous pulmonary infiltration was of known recent origin; hence these constitute a definitely selected group of patients with a less favorable prognosis than in average types of the disease. Roentgenographic and clinical evidence obtained during the period prior to treatment (control period) indicated to us that these patients possessed substandard resistance to tuberculosis. In no instance did the disease appear to extend into previously uninvolved pulmonary tissue while the patient was under streptomycin therapy and in at least sixteen of the twenty-one cases of pulmonary tuberculosis objective evidences of improvement appeared within four to eight weeks of institution of treatment. The rate of improve-

ment observed was frequently not greatly accelerated when compared with similar lesions among untreated patients with good resistance. It is suggested that these reparative processes are dependent on slow mechanisms of healing which cannot be stimulated artificially. No evidence of rapidly effective bactericidal action of streptomycin on the tubercle bacillus was noted but results were consistent with the hypothesis that the drug had a suppressive effect so long as its administration was continued. One patient in this series, who was in extremis when treatment was begun, died two months later despite roentgenographic evidence of slight improvement; this was the only fatality in the series.

Four patients who had generalized miliary tuberculosis in late stages have been treated and all have died despite unmistakable roentgenographic and histopathologic evidences of consistent healing trends. At necropsy the cause of death was not clearly evident on morphologic grounds.

Five persons who had draining sinuses of tuberculous origin have been treated. Closure of the sinuses has been observed in each instance but recurrences have developed in three cases after treatment was discontinued. A second course of treatment has been instituted and found to be apparently effective in two of these instances of recurrence.

Nine cases of renal tuberculosis have been observed. In eight the urine has been at least temporarily freed of tubercle bacilli, with definite improvement of symptoms. Cystoscopic observations have frequently shown evidence of healing of the tuberculous cystitis. Six instances of recurrent tuberculous bacilluria have already occurred after discontinuance of treatment and more are anticipated after lapse of further time.

Streptomycin has not shown a definite therapeutic effect on tuberculous empyema when injected intrapleurally in five cases. This result is possibly due to unfavorable hydrogen ion concentration of the exudate or to other factors which are now under investigation in collaboration with Dr. Karl Pfuetze (Mineral Springs Sanatorium).

The remaining ten patients whose tuberculosis was treated with streptomycin presented miscellaneous manifestations of the disease, including some unusual types of extrapulmonary tuberculosis; in at least six cases there was objective evidence suggesting that a suppressive effect was exerted by streptomycin.

Much more study and observation will be required to define the possibilities and limitations of streptomycin therapy in cases of tuberculosis, but preliminary observations are sufficiently extensive and appear to be sufficiently encouraging to justify such investigative projects when supplies of the drug permit. In the meantime it is important to emphasize the limitations of streptomycin in treatment of tuberculosis, limitations which are at least in part due to the nature of the disease. We are fully cognizant of the danger of errors in clinical judgment of therapeutic effects in an unpredictable disease like tuberculosis, in which spontaneous healing frequently takes place. Such errors have been responsible for repeated waves of unwarranted optimism over other alleged remedies which ultimately failed. Streptomycin should not cause abandonment

or even postponement of methods of treatment of which the effectiveness has been proved. Such methods are care in a sanatorium and collapse therapy.

Streptomycin is being produced in small quantities only and as an experimental drug its distribution is regulated by Federal law. Manufacturers allocate supplies to special research projects and physicians engaged in such research are not permitted to divert supplies to other purposes. Until production is greatly increased, streptomycin will remain unobtainable even in many circumstances in which a trial of the drug would be clearly indicated.

CONCLUSIONS

Streptomycin possesses the pharmacologic characteristics required of a practicable antibacterial agent for treatment of human disease.

The range of efficacy of streptomycin extends the possibility of antibiotic therapy to treatment of several diseases which are not amenable to treatment with other chemotherapeutic agents.

Experimental tuberculosis of guinea pigs may be arrested by prolonged treatment with streptomycin even though the disease has been permitted to become well developed prior to institution of therapy.

A total of fifty-four patients with different types of clinical tuberculosis have been treated with streptomycin. The results indicate the necessity of much more extensive clinical use of the drug in treatment of tuberculosis on an experimental basis. Present evidence clearly indicates that streptomycin does not exert a rapidly curative effect on clinical tuberculosis, although it does appear to modify the course of the disease in a favorable manner and exert a suppressive effect on previously progressive tuberculosis. At the present time it must not be considered as a substitute for any other form of treatment.

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HISTOPLASMOSIS

A Report of Four Cases, Two in Siblings. Histoplasmin Test and Other Diagnostic Procedures

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INTRODUCTION

HISTOPLASMOSIS was first observed and described by Darling[1] in Panama in 1906. His three cases were in adults[1-3] and the first three cases reported from the continental United States were in persons above the age of 40. The observation of additional cases showed that the disease was not confined to the tropics nor did it occur only in adult life. In 1934, Dodd and Tompkins[4] reported a case of this mycosis in a 6-month-old child living in Tennessee. The diagnosis was made during life and the fungus was first isolated in culture and identified by DeMonbreun.[5] In the excellent summary review of the disease made by Parsons and Zarafonetis[6] they point out that in eleven of sixty cases for which age data were available the patients were less than 1 year of age. Thereafter the frequency of histoplasmosis appears to drop sharply, rising again to a plateau in the age group ranging between 40 and 70 years. Histoplasmosis is of special interest to pediatricians not only because of its apparent predilection for infancy, but also because of the suggestion made by a number of investigators that this mycosis, fatal in nearly all recognized cases, may occur in a benign form which is now unrecognized and that therefore it may be much more common in childhood than is generally supposed. The apparent increase in the number of recognized cases may possibly be due to its more frequent recognition now than formerly, rather than an absolute increase in its frequency. However, some investigators believe that the actual incidence of the disease is definitely on the increase.

The following report represents a clinical summary of four cases of histoplasmosis which have been seen in Children's Hospital, Washington, D. C. Two of the cases, hitherto unreported, occurred in brothers and represent the first reported instance of histoplasmosis in siblings. The other two cases have been previously reported[6, 7] and will be reviewed briefly. These four cases are presented because they raise important epidemiologic considerations. All four patients were children living in Loudoun County, Va., within an area having a radius of eight miles, suggesting that there may be in this area an unusual geographical concentration of the mycosis (Fig. 1). In addition, the occurrence of histoplasmosis in siblings suggests that there may have been trans-

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mission from one person to another. These circumstances will be considered in more detail after presentation of the case reports.

CASE 1.—S. D., a 7-year-old white male, was first admitted to the Children's Hospital, Washington, D. C., on Dec. 13, 1944, with the chief complaint of "swelling in the neck."

Approximately eight weeks before admission the child's mother noted bilateral enlargement of the glands in his neck. The gland in the right submaxillary region had caused the patient to complain occasionally of pain. His local physician was consulted for these glandular enlargements after they had been present for one week and sulfadiazine was prescribed, but no improvement was noted. During this time no fever had been present.

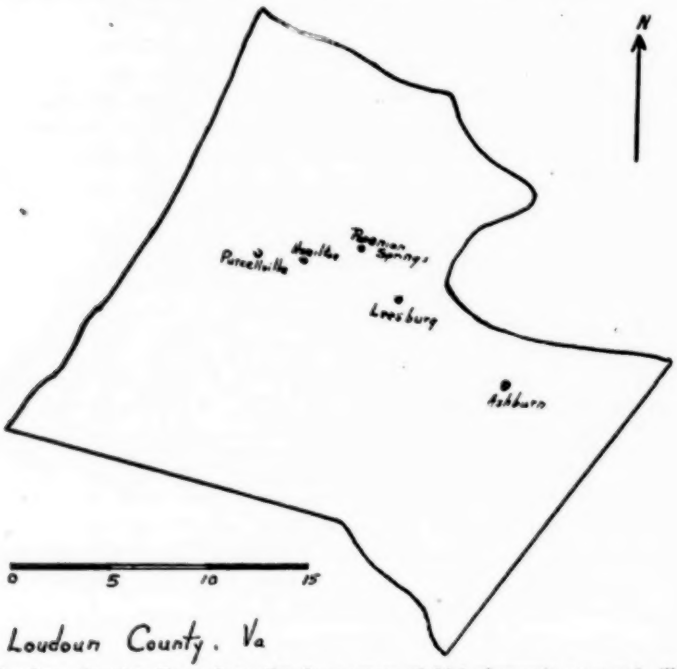

Fig. 1.—Loudoun County, Va., where the four cases of histoplasmosis occurred, illustrating their geographical proximity.

Four weeks later, the enlargement of the cervical glands persisting, blood specimens for agglutination tests were obtained and reported negative for typhoid, paratyphoid, tularemia, and brucellosis. The Weil-Felix reaction and a tuberculin patch test done at that time were also negative. The cervical glands, especially on the right, became progressively larger until his first admission on Dec. 13, 1944 (Fig. 2).

Past history revealed that approximately one year before, he had had an attack of "grippe" and shortly thereafter had an acute otitis media which spontaneously ruptured yielding a purulent exudate. He was unattended by a physician during this period. Eight months before his present illness he had made an uneventful recovery from chicken pox and about five months before had had a unilateral swelling in the parotid region which disappeared spontaneously after a few days. This was believed to have been an attack of mumps. The child visited the dentist about two years before his admission and was treated at that time for bleeding gums and whitish ulcers of the tongue and buccal mucosa diagnosed by the dentist as trench mouth.

The patient was born and raised in the town of Ashburn, Loudoun County, Va., and had lived there since birth, not having traveled beyond a radius of some twenty miles of Ashburn during his entire life. He was the second child; the first was premature and lived only one month. A younger brother, aged 5 years was the only living sibling and at that time was in good health. The patient's birth and developmental history were normal.

Fig. 2.—S. D. (Case 1) at the time of his first admission to Children's Hospital in December, 1944. Note the right-sided glandular enlargement in the neck.

The family drank a considerable quantity of bottled, pasteurized milk which was obtained from a farm in Ashburn. Until two years previously, the parents owned a cow and for several years the family drank raw unpasteurized milk from this animal. Water was obtained from a well which was stated to supply good water. The family kept chickens and two hogs. They had not permitted the boys to have a dog or other domestic pets.

Physical examination revealed a well-developed, well-nourished white male child who was not acutely ill or in any apparent distress. Lymph glands in the cervical and submaxillary regions were enlarged, particularly on the right side, the largest being about the size of a small hen's egg. The glands were quite discrete, freely movable, firm, and only slightly tender. Axillary lymph nodes were enlarged bilaterally and discrete. The inguinal nodes were palpable but not appreciably enlarged. The remainder of the physical examination was essentially negative.

A blood count revealed 11 Gm. hemoglobin, 3,300,000 red blood cells, 9,400 white blood cells, 55 per cent of which were neutrophiles, 33 per cent lymphocytes, 7 per cent eosinophiles and 6 per cent monocytes. Blood culture and Wassermann were negative as was a stool examination for ova and parasites. Total serum protein was 8.53 Gm. per cent with an

albumin-globulin ratio of 1.1:1. A sample of blood taken for heterophile antibodies (Paul-Bunnell test) showed no agglutination in a dilution of 1:7.

On this first admission the patient showed a low-grade fever ranging between 99 and 100° F. during his five-day hospital stay. His weight was 55 pounds. A biopsy of a gland in the right side of the neck was taken on Dec. 13, 1944, and reported (Fig. 3) by Dr. J. W. Lindsay as follows: "Sections show a striking picture with numerous nodules of epithelioid cells, many of which are incorporated into large multinucleated giant cells of the Langhans-Schuffel type. In some areas there are broad pits of connective and reticulum tissue and in others dense masses of plasma cells. There is a border of somewhat hyperplastic lymphoid tissue and occasional eosinophile cells are noted. The condition is considered to be tuberculosis (or possibly Boeck's sarcoid) rather than neoplastic. The possibility of some fungus infection might be considered. It is assumed that the complement fixation test is negative."

Fig. 3.—Lymph node biopsy on Case 1 in December, 1944. The large multinucleated giant cells of the Langhans-Schuffel type are readily noted. (×150.)

X-rays of the hands and feet revealed no evidence of sarcoid deposits or any other abnormality and roentgenologic examination of the chest revealed only an increase in bronchovascular markings throughout the parenchyma but no other evidence of abnormality. A tuberculin skin test of $\frac{1}{10}$ mg. old tuberculin was negative. Five days after admission the patient was discharged to be followed at home.

A diagnostic course of x-ray therapy to the cervical glands was given anteriorly and posteriorly to the right side of the neck for four weeks. At the end of this time there was a rather remarkable reduction in the size of the glands although they never did actually disappear. Further roentgen therapy totaling 3,000 r was administered during the next five months to the various sites of glandular enlargement. The liver and spleen at the time of initial examination and during this follow-up period were never palpable although several times during this period the boy complained of a vague, recurrent, abdominal pain. In view of the clinical picture, the radiosensitivity of the cervical glands and failure to demonstrate any evidence of tuberculosis, the diagnosis of tuberculosis or Boeck's sarcoid, as suggested by the biopsy of the gland, was discarded and the probable diagnosis of Hodgkin's disease was favored.

During the ensuing ten months the patient ran a gradual downhill course becoming progressively weaker and a loss of eight pounds was noted during this period.

During July, 1945, the patient developed a severe diarrhea consisting of from four to six loose, bloody bowel movements a day. This diarrhea was accompanied by a lancinating type of pain in the lower center portion of his abdomen which was intermittent in character and seemed to have no relation to meals. His mother noted that his ankles began to swell shortly before his second admission in October, 1945. This edema was more prominent in the evening, disappearing during the night and usually being absent in the morning, but for the two weeks prior to the second admission this edema of the legs had been constant. During this observation period the patient's temperature had not been taken but the mother thought that he probably had some temperature elevation in the evening for two or three weeks prior to this second admission.

On Oct. 7, 1945, the patient was readmitted to the hospital because of progressive emaciation, persisting bloody diarrhea, and fever.

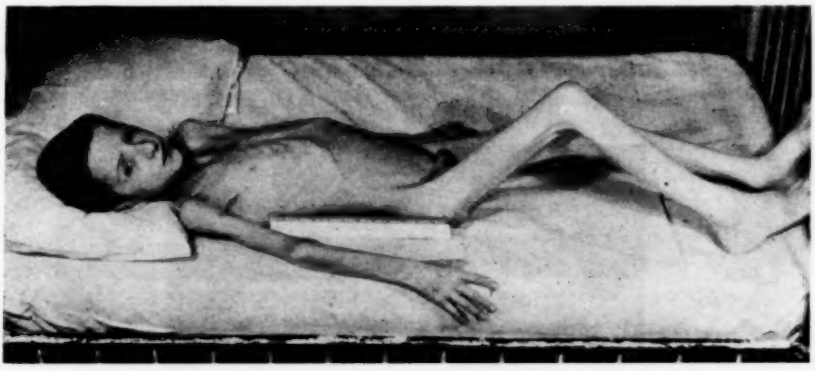

Fig. 4.—S. D. (Case 1) at the time of readmission to the hospital in October, 1945, illustrating the marked emaciation.

Physical examination upon this admission revealed a poorly nourished, markedly emaciated 7-year-old white male (Fig. 4) who was not in acute distress. The skin was dry and pallid. The anterior and posterior cervical, axillary, and inguinal glands were palpable, discrete, hard, nontender, and measured about 1 to 3 cm. in size. The pulse was 120, temperature 100.6° F. and respirations 22. The lips, gums, tongue, and mucous membrane of the buccal cavity were coated with a thick, whitish, curdlike crust, difficult to remove. The edges of the tongue were beefy red and were not coated. The heart and lungs were normal to percussion and auscultation. The abdomen was somewhat distended, but the liver and spleen were not palpable. There was no tenderness or rigidity noted. The extremities revealed a 2 plus pitting edema of the feet, ankles, and pretibial regions but were otherwise negative.

Roentgenologic examination of the chest showed a small amount of infiltration in the right base associated with some small areas of calcification at the roots of the lungs, which was interpreted as representative of a resolving bronchopneumonia. X-ray of the skull was negative. Examination of the blood revealed 7 Gm. of hemoglobin with 3,000,000 red blood cells. The white cell count was 4,600 with a differential count of 74 per cent neutrophiles, 18 per cent lymphocytes, 5 per cent eosinophiles, 1 per cent basophiles and 2 per cent monocytes. Hemograms were repeated on four subsequent occasions and except for a variation in the hemoglobin and red blood cell count following blood transfusions, these remained essentially the same. Urinalyses were negative as were repeated blood and stool cultures. Agglutination tests were negative except for *Salmonella schottmülleri* which was positive in dilutions of 1:20 through 1:2,560. Three days later agglutination tests were repeated and again found positive in the same dilutions. Repeated examinations of the blood and stools, however, failed to demonstrate the presence of *S. schottmülleri*. The total serum protein upon this admission was 3.04 Gm. per cent with an albumin-globulin ratio of 1:2.1.

During the entire month of observation in the hospital on this second admission the patient continued to have a septic fever with the temperature fluctuating between 99 and 104° F. daily. The pulse followed the temperature and ranged between 50 and 130.

The patient was given a course of sulfadiazine for one week and after showing no response, this therapy was discontinued and for several days a trial course of penicillin was given, again without any effect. Treatment during this period was essentially symptomatic and consisted mainly of repeated blood transfusions and attempts to improve the nutritional status of the patient. This was followed by a disappearance of the edema of the legs.

A proctoscopic examination revealed marked hyperemia of the rectal mucosa with loss of the mucosal folds. The mucosa appeared edematous and brownish-gray but no ulcerations were observed. Bone marrow smear and culture were made and reported as showing no evidence of histoplasmosis; tuberculin skin test was repeated and again proved to be negative. A histoplasmin cutaneous test in dilutions of 1:1000, 1:100, 1:10 and undiluted were all negative in 24, 48, and 72 hours. All efforts to establish a diagnosis of histoplasmosis in this case were unsuccessful in spite of the fact that this diagnosis had already been confirmed in the case of his brother who had been admitted to the hospital on Sept. 28, 1945. (See Case 2.)

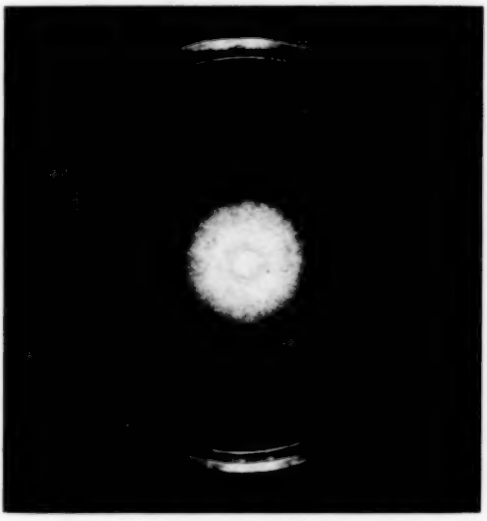

Fig. 5.—Illustrating the growth of *Histoplasma capsulatum* on Sabouraud's agar media.

Shortly after his brother died of histoplasmosis, the patient was discharged upon the request of his parents. The prognosis was obviously poor. At home, the child continued his rapid downhill course. He had lost a tremendous amount of weight and was extremely emaciated. At this time, examination and culture of the oral lesions and of stools revealed large numbers of *Candida albicans*. The severe bloody diarrhea had continued unabated at home and starting on November 16, he began to bleed from the rectum and died three days later on November 19.

A noteworthy feature was that almost concurrent with the patient's death, the bone marrow culture, which had been planted one month previously on Sabouraud's media, finally began to grow white fluffy colonies characteristic of *Histoplasma capsulatum* (Fig. 5).

Necropsy Summary.—Permission for examination of the head was not obtained. The body had been embalmed prior to the performance of the necropsy.

The liver extended 3 cm. below the costal margin in the mid-clavicular line. The surface was smooth and several grayish areas about 1 cm. in diameter were noted on the left lateral surface. On section the tissue had a distinctly yellow color and showed the nutmeg appearance of chronic passive congestion. No definite nodules or tubercules were found. Microscopically the parenchymal cells were found almost completely converted into fat. The few cells remaining more or less intact were swollen and pale staining. Numerous foci of leucocytic infiltration and degeneration or necrosis were seen chiefly in association with the vessels. Numerous *Histoplasma capsulatum* organisms were present.

The spleen was enlarged about one-third greater than its expected size and measured 11 by 9 cm. The cut surface was homogeneous and of a bright red color. Several gray areas averaging 2 mm. in diameter were noted. Microscopically, the spleen was found to be intensely congested. There were numerous foci of degeneration and necrosis with some areas of fibrosis. Several conglomerate tubercle-like formations were noted. The Malpighian corpuscles were rather less dense than usual. Many organisms having the morphology of *Histoplasma capsulatum* were noted.

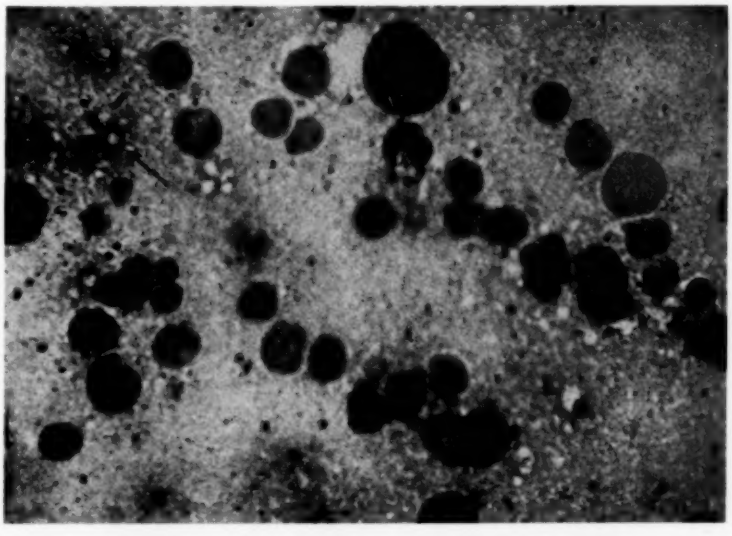

Fig. 6.—Smear of bone marrow in Case 1. Arrow indicates a *Histoplasma capsulatum* organism. An estimate of the size of the organism can be obtained by comparison with adjacent red cells. (×1350.)

The gall bladder, pancreas and adrenals showed no essential pathologic changes either grossly or microscopically.

On examination of the gastrointestinal tract the mucosa of the intestine was found to be hyperemic. Throughout the ileum were found areas of lymphoid hyperplasia more or less alternating with patches of ulceration. Other areas showed marked thickening up to 3 to 5 mm. producing an annular constriction of the wall. On the serosal surface the sites of ulceration imparted a bluish color to the wall and it was evident that there was little more than serosa remaining of the entire wall in these areas. In the terminal ileum the lymphoid elements were hyperplastic producing a cauliflower-like appearance. In the colon, areas of ulceration and thickening of the wall were also noted.

The cut surfaces of the kidneys were pale and edematous. At one pole of the left kidney a firm, gray, circular area, 5 mm. in diameter, having the appearance of a tubercle was noted. Histologically the kidneys appeared somewhat congested. The epithelial cells of the

convoluted tubules were somewhat swollen and granular while those of the straight tubules were hydropic and generally intact. Occasional foci of degeneration were noted. A moderate number of Histoplasma organisms were present.

Histologically the lung tissue was found to be generally air containing although there were scattered small areas of fibrosis. Many of the endothelial cells were filled with *Histoplasma capsulatum* organisms.

The retroperitoneal lymph nodes were found to be moderately enlarged and on section were found to contain numerous Histoplasma organisms.

The bone marrow was rather thinner than usual and on smear and culture revealed yeastlike bodies having the morphology of *Histoplasma capsulatum* (Fig. 6). Similarly a smear and culture of the spleen revealed these same organisms.

CASE 2.—J. D., a 6-year-old white male and the brother of the patient in Case 1, was admitted on Sept. 28, 1945, with the chief complaint of septic fever ranging between 100 and 104° F. since September 7. There were no other complaints except anorexia, loss of about 4 pounds and constipation. Prior to the onset of these symptoms, he had been in apparent good health.

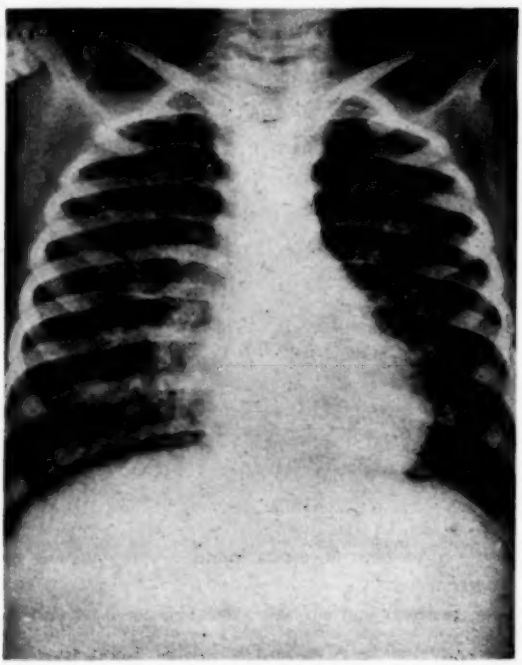

Fig. 7.—Chest x-ray (Case 2) showing moderate infiltration more marked in the upper half of the right lung.

The family history and background were the same as in Case 1. The child had been in the same environment almost continuously with his brother, and except for a short hiatus, had slept in the same bed with his brother during the latter's prolonged chronic illness. His past history was essentially negative.

Physical examination revealed a pale, well-developed, well-nourished, 6-year-old white male, who did not appear acutely ill. The liver and spleen were enlarged 7 cm. below the costal margin, both organs being smooth, nontender and firm with sharply defined borders. The abdomen was protuberant but there was no ascites. The anterior and posterior cervical

lymph glands were slightly enlarged, discrete and nontender. There was some muscle atrophy due to disuse already evident in the extremities. Temperature upon admission was 100° F. and during his entire month's stay in the hospital prior to his death he showed a daily temperature rise ranging between 100 and 104° F. The pulse rate was rapid, ranging between 120 and 150.

Hemogram revealed a hemoglobin of 8.5 Gm. with 2,630,000 red blood cells. The white cell count was 8,400 with a differential of 71 per cent neutrophiles, 26 per cent lymphocytes, and 3 per cent eosinophiles. Thrombocytes numbered 175,000 per cubic millimeter. Subsequent blood counts were essentially the same. A urinalysis was negative. Repeated agglutination tests with bacterial antigens were negative as were numerous blood cultures made on brain-heart infusion media and blood agar pour plates.

Fig. 8.—J. D. (Case 2) as he appeared about three weeks after hospital admission in October, 1945. At this time a diagnosis of histoplasmosis had been definitely established by sternal marrow examination. Note the delineation of the hepatosplenomegaly and the area of ulceration about the left nares and perineal region. The degree of emaciation is less marked than that of his brother (Case 1). (See Fig. 4.)

X-ray examination of the chest revealed a moderate infiltration throughout both lungs extending from the apices to the bases, more marked in the upper half of the right lung and interpreted as representing bronchopneumonia (Fig. 7). X-rays of the long bones of the extremities were normal. An intradermal test for brucellosis was negative as were varying dilutions of tuberculin. The histoplasmin skin test in dilutions of 1:1000, 1:100, and 1:10 and undiluted were all negative.

The patient pursued a rapidly downhill course. The spleen enlarged rapidly almost to the iliac spine. He had several episodes of epistaxis and developed irritating ulcers in the region of the left nares and anus (Fig. 8). Sulfadiazine and penicillin were both given empirically without any effect.

A diagnosis of histoplasmosis or kala-azar was entertained following repeated negative attempts to establish a more common etiologic basis for the symptoms. Sternal marrow biopsy on September 19 definitely established the presence of numerous organisms having the morphological appearance of *Histoplasma capsulatum* (Fig. 9).

Therapy was entirely symptomatic as in Case 1. The patient expired on Oct. 27, 1945, one month after admission to the hospital.

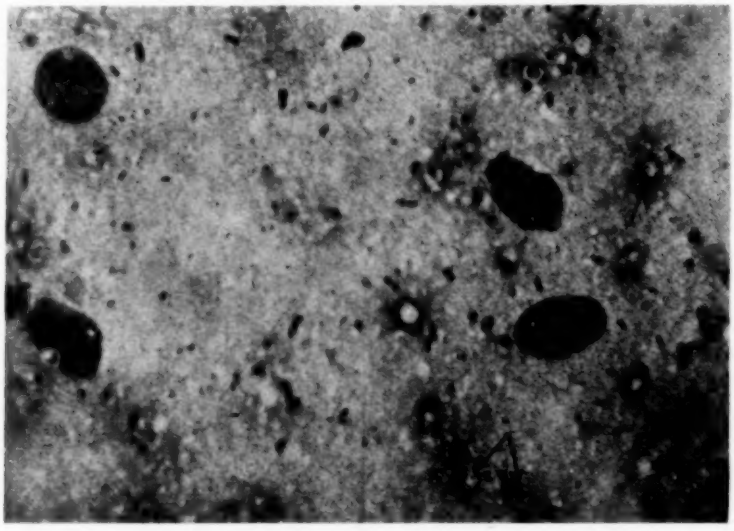

Fig. 9.—Premortem bone marrow smear of Case 2. Arrows indicate *Histoplasma capsulatum* organisms. (×1350.)

Necropsy Summary.—The body was that of a well-developed, emaciated white male. There were fine capillary hemorrhages into the skin of the upper thorax and neck with a purplish mottling of the skin of the dependent portions of the body. There was some excoriation and ulceration about the left nostril. Two purpuric spots were present just below the anterior superior spine of the ilium.

Examination of the brain on removal and on section after formalin fixation revealed no evidence of pathology. The mediastinal and bronchial lymph nodes were gray, firm, and markedly enlarged. They formed a collar about the trachea and were prominent in the hilar regions.

Approximately 30 c.c. of turbid orange-colored fluid was present in each pleural cavity. On examination of the lungs the surfaces were found to be smooth with color varying from a bright red to dusky maroon. They were quite firm and, while definitely congested, they had a more homogeneous appearance on section than could be accounted for from edema and congestion alone. The cut surface showed a number of gray nodules measuring several millimeters in diameter scattered throughout the parenchyma. On microscopic examination there were broad, densely consolidated areas apparently due to atelectasis with pneumonitis. Plasma and endothelial wandering cells appeared to predominate. Many of the endothelial cells were filled with Histoplasma organisms.

The pericardial sac contained about 20 c.c. of deep yellow clear fluid. The heart weighed 150 grams (normal 94 grams). On the surface of the right auricle just above the inferior vena cava, a 3 mm. yellow nodule was found which extended a short distance into the muscle wall.

The peritoneal cavity was found to contain about 50 c.c. of clear, straw-colored fluid. On examination of the liver the external surface was found to be smooth and light brown in color with innumerable yellowish-white flat areas varying in size from 1 to 6 mm. in diameter scattered over the surface. The cut tissue was reddish brown with many grayish miliary areas scattered throughout. On microscopic examination the parenchymal cells were well preserved. There were numerous areas of degeneration or necrosis and some fibrosis in these areas. Great numbers of Histoplasma organisms were found frequently filling the cells.

The spleen was considerably enlarged weighing 660 grams (normal 50 grams). The surface was relatively smooth, of a dark maroon color with many round gray areas scattered throughout. The largest grayish-white area measured 5 mm. in diameter. On microscopic section the spleen was found to be considerably congested and there were many Histoplasma organisms noted.

On examination of the gastrointestinal tract, the ileum and cecum were found to contain a number of firm, yellowish-gray, elevated masses extending from the mucosa. Occasionally some ulceration was observed. The Peyer's patches were prominent and were apparently undergoing ulceration. The pancreas, the adrenals, and gall bladder were essentially normal.

The surface of the kidneys was smooth and light grayish rose in color with many firm, red, interlacing lines due to capillary engorgement. The cut surface was smooth and reddish gray with poor differentiation. On histological examination there was striking granular degeneration and swelling of the epithelial cells. The glomeruli were congested and there was some degeneration of the capillary cells. The Histoplasma organisms were only sparsely scattered through the kidney tissue.

The ureters, bladder, and generative organs were normal. The celiac, retropyloric, prepancreatic, and mesenteric lymph nodes were markedly enlarged and firm.

Histoplasma capsulatum was isolated in culture from heart's blood, spleen, and liver.

CASE 3 (Previously reported by Shaffer and associates[7]).—F. C., an 11-month-old white female, was admitted to Children's Hospital on July 22, 1938, with a chief complaint of inter-

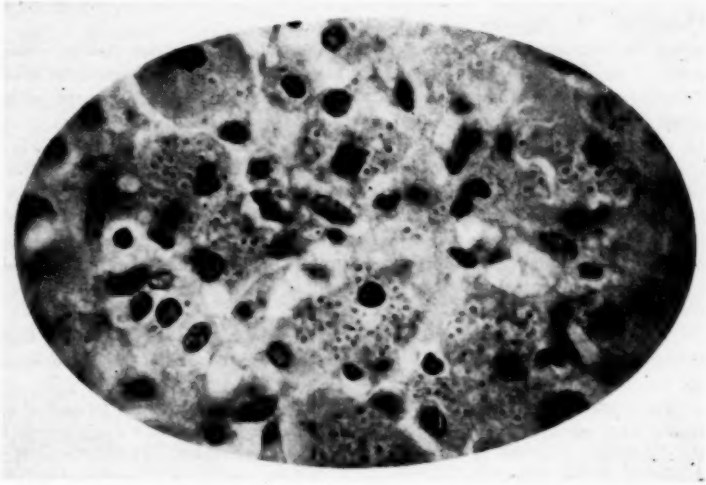

Fig. 10.—Adrenal gland in Case 3 showing numerous *Histoplasma capsulatum* organisms.

mittent fever of four months' duration. One month prior to entry, the infant exhibited a marked drowsiness accompanied by periods of alternating diarrhea and constipation.

Past history and family history were noncontributory. The patient lived on a farm near Paeonian Springs in Loudoun County, Va., approximately 15 miles from the home of the two previously described patients.

Physical examination revealed bilateral cervical adenopathy and marked hepatosplenomegaly. Temperature was 103° F.

Laboratory examination showed a severe hypochromic anemia, and leucopenia with a shift to the left of the white cell series. A platelet count revealed no thrombocytes on smear. Urinalysis was negative. Tuberculin, Schick, Wassermann, and Kahn tests were all negative. Sternal puncture was attempted without success on August 5, eight days before death.

In view of the presence of hepatosplenomegaly and the aberrant blood picture, a clinical diagnosis of aleucemic leucemia was entertained.

The patient's course in the hospital showed a rapid terminal progression. The temperature fluctuated between 100 and 105° F. during the entire hospital stay. Shortly before death, a small gangrenous, pea-sized area of ulceration appeared on the right ala nasi and became progressively larger. The patient died on August 12, approximately seven months after the onset of illness.

On post-mortem examination, organisms having the morphology of *Histoplasma capsulatum* were found in almost all tissues including the liver, lungs, spleen, mesenteric lymph nodes, kidneys, adrenals, bone marrow, and subcutaneous tissue (Fig. 10).

CASE 4 [Parsons and Zarafonetis[6]—Case 61 (Hunter)].—C. S., a 4-year-old white female, was admitted to Children's Hospital under the care of Dr. Edgar P. Copeland in October, 1922, with a chief complaint of intermittent fever and progressive loss of weight. In March, 1921, eighteen months prior to entry, she began to run an intermittent fever accompanied by marked lethargy and loss of appetite. This episode continued for about three weeks, following which she showed marked improvement and, according to the parents, regained her normal health. During the next eight months the child appeared moderately well except for periodic episodes of high fever and prostration which continued for one or two days and then subsided. In the intervals between these sporadic exacerbations of fever she appeared moderately alert and active.

Six months prior to entry, she began to lose weight steadily and appeared quite listless. At this time she was admitted to another hospital and was discharged two weeks later, ostensibly improved. No diagnosis was made at this time.

During the next six months her fever continued in intermittent fashion. She became progressively more emaciated and during this time her abdomen was noted to have become enlarged. About four months prior to entry "walnut-sized boils" appeared on her scalp and recurred in crops at various times subsequently.

The past history and family history were noncontributory. The patient was residing in Hamilton, Va., in Loudoun County at the time of the onset of her illness. This locality is not more than ten miles distant from the homes of the other patients (Cases 1, 2, and 3).

She was admitted to Children's Hospital on August, 1922. Physical examination on entry revealed a severely emaciated 4-year-old white female who appeared chronically ill. Respirations were rapid and shallow. There were numerous furuncles on the scalp. The cervical, axillary, and inguinal nodes were enlarged as was the liver and spleen. The physical examination was otherwise negative.

During her course in the hospital she became progressively worse. The temperature remained persistently elevated during her entire stay and the child expired one month after entry.

On post-mortem examination, histological examination revealed parasitic organisms which, at the time, were thought to be Leishman-Donovan bodies and a diagnosis of kala-azar was made. However, a review of these microscopic sections recently by Dr. Oscar Hunter and the pathologists at the Army Medical Museum, Washington, D. C., suggested that these organisms were *Histoplasma capsulatum* rather than Leishman-Donovan bodies.

DISCUSSION

Pathology.—Histoplasma capsulatum grows as a small, yeastlike organism in the reticuloendothelial cells, tissue endothelial cells, and the blood and marrow mononuclear cells. Humphrey[8] has described three rather well-defined types of lesions in histoplasmosis. In the first stage "there are areas in which isolated phagocytic cells are filled with parasites," followed by a second phase in which necrosis occurs in the area involved and in the third phase, which is the result of necrosis, "fibrous tissue and hyaline masses replace the lesion and scarcely any laden phagocytes remain." Any of these three stages can exist simultaneously in the same patient although one of three phases may dominate the picture.

Histoplasmosis is usually a generalized disease, although on occasions, localized lesions may occur in the absence of generalized involvement. In a case reported by Phelps and Mallory,[9] the presenting symptoms were confined to the respiratory system and post-mortem examination revealed only pulmonary infection.

At autopsy, hepatosplenomegaly and lymphadenopathy are frequently noted with histological examination revealing a phagocytosis of the fungi by the reticuloendothelial cells and the intracellular multiplication of the organisms. In fifty-six autopsies summarized by Parsons,[6] lymph node involvement was found in thirty-seven. As was noted in the necropsy summary of the cases reported here, the presence of tubercles in the liver, the spleen, kidneys, and lungs also was a frequent finding. Ulcerated lesions of the gastrointestinal tract were also a prominent feature in these cases. The lungs were very frequently involved especially in cases of generalized histoplasmosis; Parsons noted the occurrence of pulmonary lesions in thirty-four of sixty-one cases. The adrenals were involved in about one-third of the cases. Other organs involved with varying frequency are bone marrow, kidney, skin, buccal cavity, larynx, pancreas, ear, brain. In three cases, vegetative endocarditis was noted.

Diagnosis.—

Clinical Diagnosis: In Darling's original report,[1] he described the disease as being characterized by splenomegaly, emaciation, and prolonged intermittent fever. Subsequent case reports have shown considerable variation in the symptomatology and the physical findings. In their comprehensive summary report, Parsons and Zarafonetis[6] found an irregular temperature to be an almost constant feature, although normal temperature in rare cases may be present during periods of remission. Anemia, hepatomegaly, splenomegaly, and lymphadenopathy were present in a majority of cases reviewed by Parsons while leucopenia, gastrointestinal symptomatology, emaciation, and ulcerations of the mouth and buccal cavity were present in approximately one-third to one-half of the patients.

The inconsistency of the presenting symptoms and the fact that it simulates several other disease entities makes the clinical diagnosis of histoplasmosis relatively impossible. In cases of hepatosplenomegaly with depression of the formed elements of the blood, the disease may readily be confused with aleucemic leucemia. In Case 3 of the series reported here, this latter diagnosis was enter-

tained premortem. Similarly the presence of marked lymphadenopathy may simulate Hodgkin's disease, lymphosarcoma and tuberculous adenitis. In a case seen by Drs. Paul Steiner and Paul Cannon and reported by Parsons and Zarafonetis[6] Hodgkin's disease and histoplasmosis were found to coexist. In one of the cases reported here (Case 1), the diagnosis of Hodgkin's diease was seriously considered in view of the marked lymphadenopathy on entry and this impression was enhanced by the rapid disappearance of the nodes under roentgen therapy. However, a biopsy of one of the nodes premortem failed to reveal the presence of Reed-Sternberg cells. In this regard Parsons and Zarafonetis[6] poses the question of whether "Hodgkin's disease, a disease in which cells of the reticulo-endothelial system become malignant, predisposes to histoplasmosis, a disease characterized by parasitization of the cells of the reticulo-endothelial system by the yeast-like forms of the fungus Histoplasma capsulatum." Kala-azar may also present difficulty in the differential diagnosis because of the close resemblance of the Leishman-Donovan bodies to *Histoplasma capsulatum*. However, as Crumrine and Kessel[10] have pointed out, the cell wall of Histoplasma is much thicker than the wall of Leishmania and the structure and irregular area of chromatin material within the cytoplasm are more suggestive of a fungus cell than a protozoan cell. Moreover, Histoplasma buds in the manner of a yeast.

In view of the chronicity, the intermittent fever, the leucopenia and anemia which are usually present in histoplasmosis, this disease may simulate brucellosis, malaria and infectious mononucleosis. The disease must also be distinguished from syphilis, neoplasm, tuberculosis, and other fungus infections in the presence of cutaneous and oropharyngeal lesions. Histoplasmosis must also be differentiated from bacillary and amoebic dysentery, tuberculous enteritis, and more rarely from idiopathic ulcerated colitis in cases where intestinal ulceration and diarrhea are prominent features of the disease. In the first case of our series, severe diarrhea persisted for several months prior to death; this may have been due to histoplasmosis or possibly a superimposed paratyphoid infection as suggested by the agglutination titer of 1:2,560 for *S. schottmülleri*.

Laboratory Diagnosis: The diagnosis of histoplasmosis can be established only by the laboratory demonstration of the fungus. The study of the blood smears and cultures and aspiration of bone marrow have been said to afford the most successful method of making the diagnosis. However, Parsons points out in his review of seventy-one reported cases that, in the nine cases where bone marrow aspiration was performed, the organisms were demonstrated in only five cases while the other four cases failed to show the parasites. It is interesting to note that three of the five cases in which this method of diagnosis was successful occurred in infants. However, as for finding the organism in blood smears, this was accomplished in only four cases. The conclusion seems rather warranted that examination of the blood smears is not too reliable a diagnostic criterion since the fungus is present in the circulating blood only intermittently, or only in very small numbers or only terminally. In two of the cases

reported here the organisms were demonstrable on bone marrow examination both premortem and post mortem.

Repeated premortem blood cultures planted in blood agar pour plates and brain-heart infusion broth were consistently negative in both Cases 1 and 2. This may have been due to the fact that cultures on blood agar pour plates were considered negative when no growth had appeared after five days. In this regard, Beamer and associates[11] have found that blood cultures may reveal growth as early as the third or fourth day following inoculation of the media. However, Parsons emphasizes the necessity of observing the blood cultures of histoplasmosis for at least two to three weeks before discarding them as negative in view of the slow growth of the organisms; positive blood cultures were obtained in nine instances in this author's summary of the seventy-one reported cases.

Biopsy of lymph nodes, spleen, and material from ulcerations probably constitutes the most reliable method of making the diagnosis. In Case 1 of our series a biopsy of the lymph nodes failed to show the organisms, however.

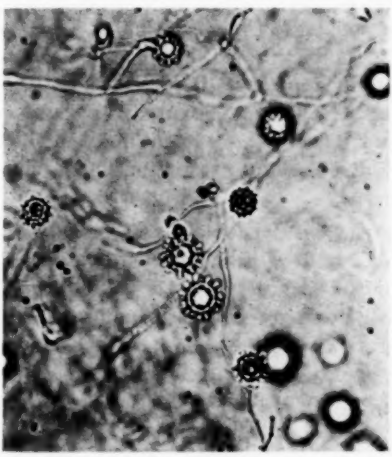

Fig. 11.—Chlamydospores of *Histoplasma capsulatum* from a culture.

Examination of the stools for the presence of *Histoplasma capsulatum* is emphasized by Henderson and associates[12] in view of the frequent intestinal involvement. Similarly, there is some suggestive evidence that the organism may be cultured from the urine, with the demonstration by Reid and associates[13] that positive urine cultures could be obtained from the urine of guinea pigs after these animals had been infected by the intravenous administration of *Histoplasma capsulatum*.

The organisms can usually be stained effectively with Wright's, Goodpasture's, Masson's trichrome, and Giemsa stains. The fungi are found as budding yeastlike cells in the cytoplasm of monocytes and polymorphonuclear cells, and in heavy infestation, many will be found free following rupture of the parasitized cells. Depending upon the extent to which the fungus has multiplied within the host cell it may occur singly or in such great numbers that

the host cell is filled. These fungus cells vary in size but are usually 2 to 3 by 3 to 4 microns. Budding can be observed in many of them. The fungus is egg-shaped like a true yeast and the bud is usually attached near the smaller end of the cell. Presumably each cell is capable of budding repeatedly in this region but as a rule only one bud is seen attached at any time. The bud may reach nearly the size of the parent cell before it is displaced. When viewed in tissue sections, there may appear to be a greater variation in the shape and size of the fungi because more of them are oriented in such a way as to be seen in cross section whereas in smears most are in longitudinal sections.

In a Giemsa stained smear certain differentiated internal structures may be observed in the fungus cell. There is a mass of purplish staining material which is usually located near the base of the cell although during the process of budding it may be located next to the bud and similar material may be seen in the bud. If the bud is young or partially formed, these chromatin masses may be continuous from parent cell to bud, but in the older buds, the chromatin has migrated to the distal end of the bud and the parent chromatin mass has returned to the base of the parent cell. Under some conditions this mass is cup-shaped. This undoubtedly represents the nucleus of the cell which divides during the process of budding, but the actual structure of the nucleus is not well preserved by the ordinary techniques of staining. In addition to the chromatin, the cell also contains blue staining cytoplasm and usually a small centrally located vacuole can be seen.

While the appearance of Histoplasma in smears and tissue sections and its relationship to phagocytic cells is sufficiently characteristic to differentiate it from most other known pathogenic fungi, it is necessary to isolate it in cultures to positively identify it. When the fungus is present in the circulating blood, this is comparatively easy. About 0.5 c.c. of venous blood is placed on the surface of an agar slant. Cultures can be made on blood agar slants which are then sealed and incubated at 37.5° C. to obtain the yeastlike form of the fungus in culture, or they can be made on any ordinary agar such as Sabouraud's and incubated at room temperature or 30° C. to obtain the mold growth phase. The fungus may be isolated from an excised lymph node by planting the material in the same manner. It can also be isolated from ulcers and sputum, but the bacteria present make this a slow and uncertain procedure.

On blood agar incubated at 37.5° C. some strains of Histoplasma grow in the budding yeastlike forms seen in tissues. There may be multiple budding and short chains of yeastlike cells and abortive hyphae are frequently seen, that is, this growth is intermediate between the parasitic and saprophytic stages. On agar at room temperature, it produces a white mold which becomes brown with age. Spherical spores 2 to 4 microns in diameter are formed on slender stalks arising from the mycelium. Characteristic spores are 6 to 15 microns in diameter, thick walled and bear fingerlike projections radiating from the wall. The thick wall imparts a yellow color to the spores. Many small food granules which take the fat stains are present in young spores and these fuse into a few or into a single large hyaline mass in most old spores. The peculiar radiating

adornment of the spores may be slender and almost spiny, fingerlike or fused into large obtuse masses. They appear to be derived from some material which exudes through the cell wall. When spores from this saprophytic growth phase are injected into a laboratory animal, the fungus at once reverts to the yeastlike form.

Parsons and Zarafonetis[6] recommend the use of experimental animals in the isolation of Histoplasma from contaminated material. They inoculated young mice intravenously with suspensions of ground lymph nodes from one case. All mice became infected. Dr. Carl L. Larson of the National Institute of Health isolated Histoplasma from contaminated material from Case 2 of this report by the intraperitoneal inoculation of mice. Parsons has described in detail the progress of experimental histoplasmosis in mice. Other susceptible animals include guinea pigs, rats, rabbits, dogs, and chick embryos.

We have found the hamster an excellent experimental animal. It seems to be somewhat more susceptible to histoplasmosis than the white mouse and experimentally infected animals died from two to four weeks following inoculation depending upon the dose given. A laboratory strain of Histoplasma has been carried serially for several generations in this animal using ground spleen, liver, or peritoneal fluid for animal passage.

Significance of the Histoplasmin Skin Test.—The desirability of having a specific cutaneous test to detect histoplasmosis is apparent since it would not only aid in diagnosis, but would also detect healed or arrested infections. Van Pernis, Benson, and Holinger[14] and Zarafonetis and Lindberg[15] developed a histoplasmin skin test which could be given intradermally to produce an erythema and induration at the site of infection. Emmons and associates[16] reported that 0.1 c.c. of a dilution of 1:100 of histoplasmin, prepared by growing *Histoplasma capsulatum* from two to seven months on the synthetic broth used in making tuberculin, gave a positive reaction in guinea pigs inoculated experimentally with Histoplasma; this reaction occurred within twenty-four to forty-eight hours and an arbitrary standard of positivity consisted of an area of edema .5 cm. or more in diameter after intradermal injection. These authors point out that in positive reactions, the area of erythema usually corresponds to the area of induration.

Palmer,[17] investigating the possibility that an infection with *Histoplasma capsulatum* is the cause of nontuberculous pulmonary calcification, found that among 3,105 nurses studied in the eastern and midwestern United States, 711 (22.9 per cent) showed positive skin reaction to histoplasmin. The percentage varied from 6.3 per cent in Minneapolis, Minn., to 65.8 per cent in Kansas City, Mo. Among the total group, 294 showed areas of primary calcification on x-ray and of this number with calcification, approximately four-fifths had a negative tuberculin test. Rather striking was the fact that 70 per cent of this group showed positive or doubtful histoplasmin tests. From these studies, Palmer concludes that histoplasmosis, or an immunologically related fungus, may account for the presence of pulmonary calcification in tuberculin negative reactors. A corollary of this would be the fact that histoplasmosis in a benign self-limited form may be quite prevalent, at least in the central and eastern half of the United States.

The correctness of this conclusion would rest on the specificity of the histoplasmin used in skin testing. Emmons, Olson, and Eldridge[16] have demonstrated, however, that the histoplasmin is not specific in histoplasmosis but shows cross reactions with blastomycosis, coccidiomycosis, and haplomycosis and these authors conclude that it is not possible at present to evaluate the clinical or epidemiologic significance of the surprisingly high incidence of reactions to histoplasmosis and blastomycosis as they occur singly or together in man in view of the demonstrated cross reaction between these antigens.

Since the publication of these two reports, the same lot of histoplasmin has been further tested by one of us (C. W. E.) on animals with other experimental mycoses and a cross reaction with *Candida albicans* was demonstrated. This fungus is known to be very commonly present in the sputum as a secondary invader in many kinds of pulmonary disease. Similarly it is not uncommon in thrush in infants and pregnant women and it is often present in the intestinal tract of normal individuals. If it is capable of sensitizing man to histoplasmin as it does guinea pigs, this may account for the high incidence of histoplasmin reactions observed. It is apparent that the histoplasmin used in these studies is not a specific diagnostic antigen.

In the two cases which occurred in siblings reported here (Cases 1 and 2) both were tested with histoplasmin in dilutions ranging from 1:1,000, 1:100, 1:10 and undiluted. However, in both cases the skin tests were negative in all dilutions. An interesting feature was that both parents of these siblings were positive in dilutions of 1:1,000. In the present state of our knowledge this is somewhat difficult to explain. It seems probable, however, that these patients were anergic since they were in the terminal stage of the infection when tested. An analogous situation would be the negative tuberculin reaction not uncommonly seen in overwhelming tuberculous infections.

Source of Infection.—The problem of the natural habitat of the fungus poses an interesting question. Histoplasmosis is known in man as a usually fatal disease, sporadic in appearance and world-wide in distribution. It frequently has been pointed out that perhaps histoplasmosis is not the highly fatal disease that the current mortality figures would indicate but that there may be a mild unrecognized form of the mycosis, that persons having the disease in this mild form transmit it to associates and that only the fatal cases are diagnosed and then only in the terminal stages or after death. While this possibility must be recognized, there is at present no convincing epidemiologic evidence that it is true. Two proved cases have not been recognized in one family except in Cases 1 and 2 reported here. We do not know of any other instance in which a patient with a proved diagnosis of histoplasmosis had any contact with another proved case. It is impossible at this time to determine whether the disease was transmitted from one of these brothers to the other. Obviously the opportunity for transmission was good because the boys slept together at a time when one of them had gastrointestinal symptoms. Transmission is theoretically possible, but if it commonly occurs it is not recognized. DeMonbreun[5] found that the yeast-like form of Histoplasma remains viable after room drying for at least two months and will withstand 45° C. for thirty minutes although killed after ex-

posure to 55° C. for this period. The spores of the saprophytic growth phase are more resistent to both drying and heat.

The sporadic appearance of the mycosis without recognized association between cases of infection could be interpreted to indicate that it is not primarily a human disease and is not dependent upon an unbroken chain of human infections or human carriers. If this be true, the possible occurrence of some animal host or reservoir should be considered.

Histoplasmosis in the dog has been reported by several investigators and the dog is known as a susceptible laboratory animal, but it is not yet known whether this is a common disease of dogs, transmitted from dog to dog, or whether dog and man are infected rarely and perhaps by accident from a common source. The reports of a disease which was probably histoplasmosis in mice, rats, and a ferret, the susceptibility of mice to experimental histoplasmosis and the known susceptibility of some wild species of mice to a natural infection of coccidioidomycosis[18] led to a search in the Ashburn area in Virginia for a rodent reservoir of histoplasmosis. A total of 114 rodents were trapped and examined by culture without finding the fungus. Pathologic studies on this series of rodents are not yet concluded.

The portal of entry of *Histoplasma capsulatum* is not known. Infected bites, ingestion, and inhalation have all been suggested as possible modes of entry with inhalation and ingestion the more likely possibilities. Parsons and Zarafonetis[6] point out that the number of patients having lesions about the oropharynx, gastrointestinal ulcerations and lesions of the lungs would seem to indict the mouth and respiratory tract as the most likely possible foci of entry. Henderson and associates[12] believe that the very frequent involvement of the mesenteric lymph nodes is also to be considered strong presumptive evidence that the gastrointestinal tract is a portal of entry. These investigators have attempted to inject dogs and guinea pigs by the intratracheal route without success. Humphrey[8] has drawn attention to the ear as a possible primary focus because of an associated otitis media or fungus infection of the ear noted before or during the course of illness in some of the reported cases. Because the disease has a predilection for the infant age group the possibility has been raised that domestic pets may account for the disease.

COURSE

The disease may have an acute onset and terminate rapidly while, on the other hand, it may appear in a chronic form with irregular exacerbations and long remissions. Humphrey[8] has suggested that in certain instances the lesions may remain in an arrested state for some time or may undergo fibrosis with permanent cure as a result. In the review of seventy-one cases by Parsons and Zarafonetis[6] the average course of the disease in thirty-nine cases with a duration of less than one year was five months, while four patients in this series were still living after two to six years. Of the age group under 12 years, the average duration of the disease was approximately three months.

Of the four cases reported here, one patient (Case 2) pursued a rapid fulminating course and died seven weeks after the onset of the illness. His

brother (Case 1) followed a considerably more chronic course, the disease process lasting one year. The duration of the disease in Cases 3 and 4 was seven months and eighteen months, respectively.

TREATMENT

Several types of therapy have been attempted in cases of histoplasmosis including sulfonamide drugs, quinine, ammonium, and potassium tartrate, arsenicals, pentnucleotide, iodides, and others. However, there have been no noticeable therapeutic effects from any of these drugs. In both Cases 1 and 2, sulfadiazine and penicillin were administered in large doses for a suitable interval without any overt influence on the course of the disease.

Neostam (stibium glucoside), an antimony compound, has been used in several cases with equivocal results. Mantell and associates[19] report a case in which definite improvement was noted following its use. In a case treated by Palmer and associates[20] five injections of neostam were administered and the drug was then discontinued because it was poorly tolerated by the patient. However, at post-mortem examination *Histoplasma capsulatum* could not be found even though the organisms had been demonstrated in large numbers in a biopsy prior to the institution of therapy. The occasional encouraging outcome with neostam would indicate that it warrants further trial.

Roentgen therapy has also been used in histoplasmosis. Parsons reports a case in which irradiation was used in the treatment of enlarged lymph nodes which were thought to be due to lymphosarcoma; this produced a marked reduction in the size of the nodes. On post-mortem examination, this patient showed widespread histoplasmosis while no evidence of lymphosarcoma was found; presumably the lymph node enlargement had been due to histoplasmosis. The reduction in the size of the lymphadenopathy in this case is analogous to the effect noted in Case 1 of our series. This patient initially received 1200 r of roentgen therapy to the enlarged cervical nodes resulting in a prompt marked reduction in their size. However, the effect was only palliative and did not seem to alter the course of the disease. Unsuccessful use of x-ray in other cases has been reported.

SUMMARY

Four cases of histoplasmosis (two new and two previously reported) occurred in children living in a rural area in Loudoun County, Va., within a radius of ten miles of one another. The two new patients were brothers, constituting the first reported instance of histoplasmosis in siblings. *Histoplasma capsulatum* was isolated in culture premortem from both, although neither reacted to histoplasmin. The possibility of transmission from one brother to the other is considered. A search for an animal reservoir in this area was not successful. Histoplasmin reactions in guinea pigs with experimental moniliasis are reported. The skin reactions induced in other mycoses indicate that histoplasmin is not a suitable diagnostic agent.

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Pathologist, Children's Hospital, and his staff and to Dr. Carl Larson, United States Public Health Service, for their help in arriving at the diagnosis in Cases 1 and 2. We are also indebted to Dr. Edgar Copeland for his permission to report Case 4 of this series.

Photographs used in this report were made by Mr. Seymour Kaplan, Washington, D. C.

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RHEUMATIC RECRUDESCENCES: DIAGNOSIS AND PREVENTION

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THE most characteristic feature of rheumatic infection, other than its propensity to involve cardiac structures, is its tendency to occur in repeated episodes. These recrudescences are responsible for both the high mortality and the morbidity of this disease, for less than 1 per cent of patients afflicted with acute rheumatic fever succumb during the initial attack, yet long-term follow-up studies disclose that from 25 to 40 per cent die within the ten to twenty years following the onset. It may be safely said that the tremendous spread between the immediate and the ultimate mortality is due to the profound tendency of this disease to strike in repeated episodes of rheumatic activity.

In order to emphasize again just how serious are these rheumatic infections of childhood, a fact appreciated by many but too often neglected by those concerned (including physicians), we must realize that few diseases, if any, surpass in magnitude this disorder as a cause of both death and disability in our children and young adults. Hence, in any given year it is not surprising to find that acute rheumatic fever and rheumatic heart disease account for more deaths in school-aged children than many of the much dreaded diseases of childhood. For example, the vital statistics of the United States (1943),[1] for children from 5 to 14 years of age, reveal that rheumatic fever and rheumatic heart disease caused more deaths (1,166) than all forms of tuberculosis (1,006). In fact the deaths from rheumatic infection were approximately the same as the total deaths (1,185) from poliomyelitis, diphtheria, measles, and scarlet fever. Martin[2] states that rheumatic infection is responsible for seven times as many deaths as is poliomyelitis.

To estimate the magnitude of rheumatic infection as a cause of disability, either acute or prolonged, is virtually impossible. This is in part due to the same reason which retards proper recognition from the medical profession as well as the general public. There is no limp or characteristic deformity to act as a cynosure. Were it true literally, rather than figuratively, that people "wear their hearts on their sleeves" it might be a different story. It is the examination of the heart by the physician which plays the most distinct role in evaluating the rheumatic fever problem, yet oftentimes a child escapes from the initial attack of rheumatic fever without evidence of heart involvement only to suffer a recrudescence with unequivocal signs of heart disease. Hence the estimation of disability, real and potential, is most difficult. Some idea of the significance of the problem may be deduced from data obtained during World War II.[3] Cardiovascular disease was found to be the greatest single cause of total rejection in men from 19 to 26 years of age in the first draft. Subsequent study

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has revealed that rheumatic heart disease was responsible for the greatest portion of these rejections.

Similarly significant is the experience with the military services where the incidence of acute rheumatic fever has been surprisingly high in the various Army and Navy camps. Ordinarily this age group is not expected to have such a high proportion of individuals suffering an initial attack of acute rheumatic fever. The explanation offered is that actually these men were not undergoing an initial bout but were experiencing a recrudescence. This concept is borne out by the study of Master[4] in a Naval hospital with eighty men, average age 21 years, who had acute rheumatic fever. He found that 54 per cent of the individuals gave the history of previous attacks. Inasmuch as 70 per cent of these attacks had occurred between the ages of 5 and 9 years, undoubtedly many of the other initial attacks had been forgotten. Here again the problem of rheumatic fever revolves on the focal feature of the disease, its proclivity to recrudesce.

In this presentation the matter of subsequent attacks of acute rheumatic fever—termed recurrences, recrudescences, exacerbations, or flare-ups—will be dealt with from the following considerations: General Features, Manifestations, Diagnosis, and Prevention.

GENERAL FEATURES

Number and Percentage of Recurrent Attacks.—There is a great variation in the actual number of recurrences which may range from one to six or ten or even more distinct episodes. The polycyclic nature of rheumatic infection often makes it difficult to determine whether or not an individual is suffering from a separate attack or simply a flare-up of a previous affliction. The vast majority of individuals, however, have more than one attack with the following percentages being noted by different authors:

AUTHOR	NUMBER OF CHILDREN	RECURRENCES
Roth and associates[5]	488	68%
Bland and Jones[6]	1,000	66%
Wilson[7]	673	85%

Interval Between Attacks.—The most significant determinant of a recurrence is the time of the previous episode. This interval between attacks may vary from a few weeks to many years, but there is a greater likelihood of a recrudescence during the first year following any attack. It has been observed that two-thirds of the children having an attack will have recurrences within a 3-year period and four-fifths will have recurrences within five years. Roth and associates[5] have stated that 73 per cent had recrudescences within three years after the initial attack. On the basis of Wilson's data the following ratios have been calculated:

Interval following attack	1	2	3 years
Likelihood of recurrence	3	2	1

Even though there is a greater likelihood of recrudescences within the few years immediately following an initial attack, the recent experience with the military

forces indicates that many years may elapse before a recurrence and that there is no reassurance of freedom from attacks during adolescence and young adulthood.

Relation to Age.—The peak age of rheumatic activity is from 11 to 13 years in contrast to the peak age of 6 to 8 years for the onset. Following the period of puberty, however, there appears to be a distinct decrease in the number of recrudescences. Hence, the earlier the onset the greater are the chances of recurrences; for example, a child having rheumatic fever at 5 years of age may have recurrences for six to eight years, while a 12-year-old child suffering his initial attack probably will have subsequent attacks only for two to four years. In a study of 337 rheumatic subjects, Wilson[8] observed that the likelihood of a recurrence before and after 16 years of age was 5:1. Further calculations from her data show the following ratios for recurrences at progressive age groups:

Age in years	4-13		14-16		17-25
Ratio of recurrence	7	:	2	:	1

MANIFESTATIONS

The manifestations of rheumatic fever recurrences are just as protean as those of the initial episodes. For descriptive purposes, because of the extreme variability in manifestations, recurrences may be classified as major, minor, or possible recrudescences. When the manifestations are more severe, including carditis, polyarthritis, subcutaneous nodules, or severe chorea, the attack may be considered a major recrudescence. If there are but mild joint pains, a mild chorea, or mild constitutional symptoms, with little evidence of carditis, only a minor recrudescence has occurred. At times, however, this symptomatology is only suggestive of a rheumatic flare-up, hence is referred to as a possible recrudescence. It should be emphasized that the chances of a recurrence are fully as great after a minor attack as after a major manifestation.

It has often been stated that a recrudescence is likely to manifest itself similarly to the initial attack; however, a critical study of recurrent episodes discloses a rather widespread incidence for all types of manifestations, particularly as the disease progresses through recurrences. This fact is well illustrated in Table I where the incidence of types of manifestations for the first attack is contrasted with that found to occur during the entire rheumatic career.

The types of manifestations at onset offer no criteria for the development of recrudescences. Subsequent attacks are equally likely to occur after poly-

TABLE I. INCIDENCE OF TYPES OF MANIFESTATIONS OF RHEUMATIC FEVER CHARACTERIZING THE FIRST ATTACK AND OCCURRING THROUGHOUT THE ENTIRE CAREER OF THE DISEASE

	PAIN			EN-CEPH-ALITIS	NOD-ULES	CARDITIS				SKIN
	EXTREMITIES									
INCIDENCE (IN PER CENT)	MILD	POLY-ARTHRI-TIS	ABDO-MEN	CHO-REA	SUB-CU-TA-NEOUS	MARKED	MURMUR (ALONE)	WITH POLY-ARTHRI-TIS AND/OR CHOREA	CONGES-TIVE FAIL-URE	ERY-THE-MA PUR-PURA
First attack	25	25	†	25	3	3	10	15	<1	3
Throughout entire course	67	66	13	40-48	12-19	72-83	10-20	†	26	12

arthritis, chorea, or carditis. Thus, no predictions for future progress can be set up on the basis of any individual type or group of manifestations.

DIAGNOSIS

The lack of any specific laboratory tests, together with the varied symptomatology and manifestations of rheumatic infection, places the diagnosis on a strictly clinical basis. Other than the presence of the subcutaneous fibroid nodules, which are almost pathognomonic of the disease, there are no features which are such that the diagnosis can be made unequivocally. Just as in arriving at any other diagnosis in clinical medicine, it is necessary to gather all information possible from the history, physical examination, and laboratory procedures, with a critical evaluation of these data, in order to come to the correct conclusion. Many of my medical colleagues frequently decry the lack of some specific test for rheumatic fever; this remark is usually countered with the statement that it is perhaps fortunate there are still some conditions which require critical clinical interpretation. Nonetheless, if such a specific test were developed, the conquering of this devastating condition would be greatly facilitated. Certainly one feature is true, namely, the physician is the only one with the necessary experience and knowledge to make this diagnosis.

A complete consideration of the significant features of anamnesis and clinical study are not indicated in this review; however, the author has found it very useful in dealing with medical students to list pertinent features of the history, examination, and laboratory, and to mark these as positive or negative under the heading of rheumatic and nonrheumatic.

Suffice it to say that in making the diagnosis of a rheumatic recrudescence the knowledge of a previous rheumatic episode is very beneficial. Likewise a positive family history for rheumatic fever is often helpful. The history of the occurrence of the initiating upper respiratory tract infection with hemolytic streptococci is not as frequently obtained as that reported by the exhaustive studies of the military personnel. Jones,[9] however, was able to find evidence of the precipitating respiratory tract infection in two-thirds of his series of 271 recrudescences.

Inasmuch as the criteria for diagnosis of a recrudescence are fundamentally the same as for the initial episode, some consideration may be given to the problem of differential diagnosis as observed during a fourteen-year period in the heart clinic of the department of pediatrics at the University of Minnesota. This will be discussed from the following viewpoints: (1) various disorders, mentioned in standard references, which may simulate rheumatic infection; (2) specific diagnoses which have been made when rheumatic fever actually was the cause of the clinical picture; (3) diagnosis of rheumatic fever made when in reality some other disorder was responsible for the condition; and (4) summary of the conditions especially offering confusion in the differential diagnosis of rheumatic fever.

Disorders Simulating Rheumatic Infection.—In 1941 a study[10] was made of the conditions which have been mentioned in various textbooks and articles as being of possible significance in the differential diagnosis of rheumatic fever.

TABLE II. COMPILATION FROM STANDARD REFERENCES OF DISORDERS WHICH POSSIBLY MAY BE OF SIGNIFICANCE IN RELATION TO THE DIFFERENTIAL DIAGNOSIS OF RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE

Pain	*Cardiac Symptoms*
Trauma (sprain)	Congenital heart disease
Myositis	Diphtheritic myocarditis
Purpura—anaphylactoid	Interstitial myocarditis
Leucemia	Tuberculous pericarditis
Appendicitis	Suppurative pericarditis
Osteomyelitis	Subacute bacterial endocarditis
Poliomyelitis	Gonococcic carditis
Osteochondritis	Glycogen storage disease
Rheumatoid arthritis	Accidental or functional murmur
Tuberculous arthritis	Psychic tachycardia
Syphilitic arthritis	Beriberi
Gonococcic arthritis	Anemia
Septic arthritis	Pleurisy
Scurvy	Pneumonia
Malaria	Rhabdomyoma
Pyuria	Scoliosis and chest deformity
Bacteriemia	Idiopathic hypertrophy
Upper respiratory tract infections	
Hemorrhagic diseases	*Chorea*
Erythromelalgia	Multiple neuritis
Trichinosis	Habit spasm
Glandular fever	Imitation
Brucellosis	Encephalitis
Serum sickness	Athetoid movements
Growing pains	Dystonia musculorum deformans
	Poliomyelitis
Miscellaneous	Familial ataxia
Typhoid and paratyphoid fever	Nervousness
Erythema nodosum and multiforme	Vascular cerebral lesions
Meningococcemia	Hyperthyroidism
Sickle-cell anemia	Myxedema of adolescence
Acute glomerular nephritis	Hysteria
Hodgkin's disease	Poisoning
Periarteritis nodosa	Brain tumor
	Friedreich's ataxia
Subcutaneous Fibroid Nodules	
Rheumatoid arthritis (rare)	

For the sake of completeness these are listed in Table II under the more or less general categories of the following dominant types of rheumatic manifestations: pain, cardiac symptoms, chorea, and miscellaneous. It is all too obvious that there is a potentiality of from fifty to sixty disorders which possibly could be confused with some phase of rheumatic infection.

Specific Diagnoses Made Instead of Rheumatic Fever.—The referring or admitting diagnoses have been analyzed for about 300 children with rheumatic fever. After the cases had been carefully studied, the conclusion reached was the same as the initial diagnosis in two-thirds of the cases. Although in a few instances the correct diagnosis could have been made if a little more thought had been given to the problem, there were still one-fourth to one-third of the children studied in whom making the exact diagnosis was a real problem. Since these data have been previously reported[11] a detailed consideration need not be repeated; however, a brief summary is significant. In Table III the confused diagnoses have been grouped according to the general types of rheumatic manifestations, and the relative percentages of occurrence are listed for each group.

TABLE III. DISTRIBUTION OF THE DISEASES WHICH HAVE BEEN GIVEN AS THE DIAGNOSIS INSTEAD OF THE CORRECT DIAGNOSIS OF RHEUMATIC FEVER

RHEUMATIC MANIFESTATION	CONFUSED DIAGNOSIS	PER CENT OF TOTAL INCORRECT DIAGNOSES
Pain	Poliomyelitis 5 Osteomyelitis 4 Appendicitis 25	34
Encephalitis	Nervous Emotional Neuritis Speech disorder	23
Carditis	Septicemia Bacterial endocarditis Pneumonia Pleurisy with effusion Congenital heart disease	22
Skin	Erythema Purpura	4
Kidney	Nephritis	5
General	Low-grade infections	11

Diagnosis of Rheumatic Fever Made Incorrectly.—Consecutive hospital records have been studied[12] for 982 children about one-half of whom were of the school ages from 5 to 15 years. Of these, rheumatic fever was the admitting diagnosis in 3 per cent of the cases. If such obvious diagnoses as congenital defects, fractures, and diabetes are excluded, rheumatic fever was the admitting diagnosis in 10 per cent of all school-aged children. The corrected diagnoses had the following frequency in occurrence:

Acute osteomyelitis	4 cases
Hyperthyroidism	3 cases
Leucemia	2 cases
Acute glomerular nephritis	2 cases
Poliomyelitis	1 case
Hodgkin's disease	1 case
Hysteria	1 case
Catarrhal jaundice	1 case
Chronic infectious arthritis	1 case
Recurrent tonsillitis	1 case
Idiopathic hypoprothrombinemia	1 case
Purulent pericarditis	1 case
Toxic myocarditis, post-scarlet	1 case

Conditions Important in Differential Diagnosis.—In summary those disorders which are especially to be considered in arriving at a diagnosis of rheumatic fever are presented in Table IV. On the basis of all the data available, together with clinical experience, the more significant disorders are grouped in accordance with the dominant types of rheumatic manifestations. It should be pointed out, however, that these are not strict groupings, as, for example, patients with sickle-cell anemia, leucemia, nephritis, and Hodgkin's disease may have pain as a prominent symptom. Likewise, even in rheumatic encephalitis, abdominal pain has been a dominant feature, in fact, acute appendicitis was the diagnosis of four of nineteen chorea patients for whom incorrect diagnoses had been made. Obviously geographic conditions vary the relative importance of these disorders to be considered in the differential diagnosis. At the Children's Hospital, University of Texas, sickle-cell anemia

TABLE IV. SUMMARY OF THE DISTURBANCES MOST LIKELY TO CAUSE CONFUSION IN THE DIFFERENTIAL DIAGNOSIS OF RHEUMATIC FEVER

Pain	*Encephalitis*
Appendicitis	Hyperthyroidism
Poliomyelitis	Emotional problems
Osteomyelitis	*Skin*
Rheumatoid arthritis	Erythema
Meningococcemia	Purpura
Carditis	*General*
Sickle-cell anemia	Low-grade infections
Bacterial endocarditis	Fulminating infections
Congenital heart disease	Sepsis
Leucemia	Pneumonia
Kidney	Hodgkin's disease
Nephritis	

at times is almost impossible to differentiate from rheumatic infection. Seasonal variations also influence these diagnoses. It has been observed that during the late summer months poliomyelitis is more frequently incorrectly diagnosed for patients who actually have rheumatic fever. This has been true particularly since Sister Kenny has advocated the importance of early treatment of this disease.

PREVENTION

The severity of prognosis for rheumatic infections is proportionate to the number of recrudescences in regard to both the mortality and the degree of cardiac disability. With each flare-up of the condition the likelihood of carditis becomes greater. Wilson[7] observed in 246 patients with carditis that the mortality was 20 per cent when there was but one attack, in contrast to 64 per cent after four or more attacks. Thus, anything which can be done to prevent recrudescences is mandatory.

It is particularly heartening to note that during the past decade distinct advances have been made in this direction. Our purpose at present is to review measures which have been directed toward the problem of lessening the frequency of occurrence of rheumatic episodes. These will be discussed under the following topics: (1) convalescent care; (2) climate; (3) foci of infection; (4) avoidance of upper respiratory infections; and (5) methods based on the present concept of pathogenesis.

Convalescent Care.—It has been amply demonstrated that proper convalescent care is valuable for patients with rheumatic infections. The gradual resumption of physical activity must be properly controlled with adequate rest, a nutritious diet, and satisfactory hygienic conditions to promote health and vitality. Provision must be made for education and for occupational and play therapy which will help in the psychologic adjustment of the child. All measures should be aimed toward preventing the development of the undesirable state of chronic invalidism. No critical study has been made of the various types of prolonged convalescent care regarding their effect upon the development of recrudescences. Taran,[13] in a three-year study of 110 rheumatic children from 6 to 14 years of age, given the benefit of care in a cardiac sanatorium, found the recurrences in this group were but one-half as frequent as those in a group of clinic patients living at home. Although it is well

recognized that special convalescent homes thus can offer certain advantages for the rheumatic patient, the availability of such institutions is still far short of the need for them, and the brunt of the problem of preventing recrudescences must be borne by the physician directing the care of his patients in their private homes.

Climate.—For the favored few who are economically able to move to geographic areas where rheumatic fever is less prevalent, something may be gained in the prevention of recurrences. The effect of climate upon rheumatic fever can be illustrated by the death rates from heart disease in school-aged children for different parts of the United States. These mortality rates for 1940[1] were as follows: Middle Atlantic States, 11.3; Mountain States, 10.8; New England States, 7.4; West North Central States, 6.9; West South Central States, 5.4; and Pacific States, 4.6.

Unfortunately, controlled long-period studies have not been made to compare the mortality and morbidity between individuals who have been transplanted to new localities and those who have remained in the original environment. This would be particularly important in view of some of the newer developments in the field of rheumatic prophylaxis. The author has been impressed with the prevalence of rheumatic fever in the gulf coast region of Texas. In a relatively small service at the Children's Hospital in Galveston, on several occasions as many as one-half of the children of school age on the wards were suffering from acute rheumatic infections. Similar personal observations have been made by Platou in New Orleans and Fashena in Dallas. Suffice it to say that even if the ideal geographic area for prevention of rheumatic recrudescences could be found, economic and social factors would preclude this as the solution to the rheumatic fever problem for the general public.

Foci of Infection.—Removal of such foci as infected teeth, tonsils, or sinuses has been advocated as a means of preventing recrudescences. Data concerning the significance of the sinuses and teeth in this regard are not available. Abundant evidence, however, has been brought forth to indicate that tonsillectomies and adenoidectomies, per se, are without influence upon the frequency of rheumatic episodes. The indications for removal of the faucial tissue are independent of the rheumatic infection. If tonsils are to be removed, a number of workers advocate the use of prophylactic sulfonamide therapy as a safeguard against a flare-up of the rheumatic infection. Likewise, in extraction of infected teeth, it is wise to give the benefit afforded by protective prophylactic measures.

Avoidance of Upper Respiratory Infections.—This is one of the most glib bits of advice given by physicians, but rarely are the means described by which it can be accomplished. True enough, if it were possible to prevent the occurrence of upper respiratory infections, undoubtedly the majority of rheumatic recrudescences would not develop. The general rules of avoiding contacts with such infections, preventing chilling and exposure, employing recognized standards for hygienic care and nutrition, and obtaining adequate rest can be advised without the patient being able from a practical viewpoint to accomplish the desired result. There is the hope for the future that specific achieve-

ments in this direction may be realized. Inasmuch as hemolytic streptococci appear to play an important role in the pathogenesis of this disease, much might be accomplished if upper respiratory infections actually could be avoided.

Methods Based on the Present Concept of Pathogenesis.—The exact role played by hemolytic streptococci in the etiology of rheumatic infection is not entirely clear, but it is quite generally accepted that this type of organism is implicated in the pathogenesis of the disease. Certainly the methods of prevention of recrudescences which have shown the most promise are based on the streptococcic theory. The modern concept of the chain of events which results in the production of the rheumatic state may be summarized briefly as follows: First, there is an initiating upper respiratory tract infection, caused by certain types of hemolytic streptococci, the duration of which is from one to three days. Second, a latent interval follows of from one to three weeks, during which time some phenomenon, immunologic, allergic, or otherwise, takes place. Third, the clinical manifestations of the rheumatic infection become apparent with varying degrees of severity. Carefully controlled studies[14] by the military authorities in World War II indicated that 90 per cent of the youths who suffered attacks of rheumatic fever while in certain army camps had experienced such previous streptococcic infections, with an average latent interval of sixteen days until the symptoms of rheumatic fever developed. Not all individuals, however, who have had a streptococcic infection will develop rheumatic fever; in fact, it has been estimated that only about 5 per cent of those with such infections, proved by throat cultures and increases in the blood antistreptolysin titer, will undergo a rheumatic progression. This selectivity for certain individuals manifesting the subsequent rheumatic infection possibly may be explained on the constitutional basis which allows a characteristic tissue response or reaction to certain organisms or their products. The familial incidence of this disease supports this view of a hereditary factor responsible for the peculiar chain of events characterizing rheumatic fever. Wilson's[7] studies especially are convincing. Strictly speaking, even the climatic and geographic factors in regard to recrudescences can be explained on the basis of streptococcic pathogenesis, and the same may be said regarding "avoidance of upper respiratory infections," which really means to avoid streptococcic throat infections.

Three methods of preventing rheumatic recrudescences, based on these concepts, have been used during the past few years. (1) The salicylate method is assumed to act by preventing the antigen-antibody reaction which produces the pathologic changes in the tissues. (2) The administration of streptococcic toxins is aimed at building up protection in the body to the streptococcus organism. (3) The continuous administration of sulfonamide compounds is believed to have a favorable effect due to suppressing the growth of the streptococci before they are able to develop sufficiently to initiate the chain of events which results in active rheumatic fever. It has been observed that sulfonamide administration will not prevent the recrudescence if started after the onset of the initiating streptococcic throat infection. The process has been compared to a bomb exploded by a fuse, the sulfonamides being completely ineffective

once the fuse has been lighted. (4) It is conceivable that penicillin similarly might be advantageous for prophylaxis of rheumatic recrudescences, but we have seen no reports in this regard.

Salicylate Administration.—Based on the hypothesis that salicylate administration prevents serum sickness from developing, possibly by interfering with the antigen-antibody precipitation, and that the tissue response in rheumatic infection results from such an antigen-antibody reaction. Coburn and Moore[15] carried on a laboratory and clinical study with a group of patients considered as likely to develop rheumatic recrudescences. They found that daily salicylate doses prevented the formation of precipitins but did not hinder the development of antistreptolysins. Concerning the clinical aspect of the problem, these workers administered from 4 to 6 Gm. (2 to 4 Gm. for children) of sodium salicylate daily for a month to 47 rheumatic subjects quiescent as regards activity of the infection, but who had acquired a Group A hemolytic streptococcic pharyngitis proved by throat cultures as well as clinical observations. It was found that 46 of these 47 individuals escaped the development of a rheumatic flare-up. In contrast, rheumatic recrudescences did develop in 57 out of 139 control subjects, not receiving salicylates following their attacks of streptococcic pharyngitis. A few other workers, however, who have attempted to use salicylates as a means of preventing rheumatic flare-ups, have not had the success reported by Coburn and Moore. Pennoyer and Hansen[16] attempted to carry on such a routine in an outpatient rheumatic fever clinic but were partially unsuccessful because of the lack of cooperation in having the children brought into the dispensary or hospital at the time they suffered upper respiratory tract infections. It is difficult for the average physician to obtain the necessary throat cultures and the typing of these for Group A hemolytic streptococci in order to use effectively this type of prophylaxis. It is hoped that further work on the problem will enhance this method of prevention, but we must recall that administration of large doses of salicylates for prolonged periods is not without danger in some instances.

Biologic Methods of Prevention.—For many years workers have attempted to develop protective antibodies in patients with rheumatic fever by the administration of streptococcic toxins. The most encouraging work reported in this direction is that of Wasson and Brown.[17] These authors administered a tannic acid precipitated toxin of certain strains of hemolytic streptococci at three-week intervals in 5,000, 8,000, 10,000, and 12,000 skin test doses, with the final dosage repeated at six-month intervals. In the 73 season cases so treated during 1940-1942, only 2 rheumatic recrudescences were observed, whereas in the control series comprising 60 season cases, 17 recrudescences developed with 3 deaths. It is hoped that further work with the immunologic type of prevention will justify more wide use of this method.

Prevention With Continuous Sulfonamide Administration.—In the early days of sulfonamide therapy, Dr. Paul Dwan and the author instituted sulfonamide administration to a small group of patients but interrupted the study because of the increasing reports of possible deleterious effect of the then new type of drug. After learning of the apparent success of Coburn and Moore[18] as

well as Thomas and France[19] another study was instituted and reported by Hansen, Platou, and Dwan[20] with a follow-up report by Pennoyer and Hansen.[16] This study was conducted in an outpatient dispensary. Although various workers have carried out better controlled studies with more complete laboratory data, it was felt that the results from conditions closely analogous to office practice with children might have special significance for the average physician. Our findings have been in essential agreement with those of other investigators. There were 27 recrudescences observed in 58 patient-seasons in the control group and 7 recurrences in 131 patient-seasons for those who received a sulfonamide compound prophylactically. Included in the series were some patients who, we had reason to believe, were not taking the drug regularly. In fact, in most instances of recurrences for the treated group the drug was taken irregularly, inadequately, or temporarily discontinued by the patients. Pennoyer and Hansen observed that the factors responsible for this situation were: (1) Failure to understand that the drug was to be taken continuously. (2) Indifference on the part of the patient or his parents. (3) Transportation difficulties, contingent upon gas rationing, interfering with appointments and refilling of prescriptions. (4) Discontinuance of the medication by family physicians who were not familiar with the rationale of the procedure. More surprising than these failures, however, was the excellent cooperation displayed by most of the patients under observation.

We have summarized briefly in Table V the results reported by various workers who have studied sulfonamide prophylaxis. The over-all experience comprises a total of 1,561 patient-seasons. These are mostly with children,

TABLE V. THE INCIDENCE OF RHEUMATIC RECRUDESCENCES AS INFLUENCED BY CONTINUOUS ADMINISTRATION OF SULFONAMIDE COMPOUNDS

AUTHOR	SULFONAMIDE TREATED		CONTROL	
	PATIENT SEASONS	RECURRENCES	PATIENT SEASONS	RECURRENCES
Thomas, and associates[21]	114	2	150	21
Coburn and Moore[18]	189	1	146	31
Stowell and Button, Jr.[22]	7	1	14	4
Kuttner and Reyersbach[23]	108	1	104	28
Chandler and Taussig[24]	41	1	41	5
Feldt[25]	89	0	42	3
Dodge, and associates[26]	181	4	136	19
Messeloff and Robbins[27]	25	1	30	2
Hansen and associates[20]	78	2	46	21
Total	852	13	709	134

but some of the studies have included older individuals who were quiescent rheumatic subjects. The incidence of recurrences of 1.5 per cent for the sulfonamide treated group stands in distinct contrast to 19 per cent for the control group, and seems to offer quite convincing proof that a practical means has been found to prevent rheumatic recrudescences. It is admitted that continuous medication of this type is not the ideal perhaps, but it is surprising how relatively few toxic reactions have been reported.

In order to evaluate fully whether or not this is the answer to prevention of rheumatic recrudescences, long-term studies will have to be carried on to

determine: (1) Is the mortality actually reduced, and (2) is the degree of cardiac disability actually lessened? Most workers are quite convinced of the value. Pennoyer and Hansen surveyed the number of deaths from rheumatic fever and rheumatic heart disease which occurred on the pediatric service at the University of Minnesota. In 1938, 1939, and 1940 there were 5, 9, and 13 deaths, respectively, attributed to this cause. By this time a fairly large portion of the rheumatic children were being given sulfonamides. In 1941, 1942, and 1943 the deaths from rheumatic fever were 1, 3, and 2, respectively, and in these none of the children had been given the advantage of sulfonamide prophylaxis. It may be of interest to note that the mortality rates for rheumatic fever deaths in children have been decreasing during the past few years. There were 1,662 such deaths in the United States in 1940, 1,399 deaths in 1941, and 1,166 deaths in 1943. It is possible only to conjecture that this trend might be attributable in part to the increased use of prophylactic measures in reference to rheumatic recrudescences. The author has become convinced further of the necessity for prophylactic measures from experience gained at the Children's Hospital at the University of Texas School of Medicine in Galveston. A surprising number of children suffering from rheumatic recrudescences have been on the service here, and the number of deaths in such recurrences has been greater than had been expected in an institution so favorably located in the Southland.

The general recommendations which seem advisable in regard to employing sulfonamides for the prevention of rheumatic recrudescences may be summarized as follows:

1. The patient should be free from evidence of rheumatic activity.

2. The parent as well as the patient should have a clear idea of the purpose and reasons for the undertaking and in turn the physician should have assurance from them that proper cooperation will be forthcoming.

3. Periodic examinations, at first, every week for three to four weeks, then at four- or possibly six-week intervals. In addition to the careful physical examination, the hemoglobin, leucocyte, and differential white cell counts and urinalysis should be followed in order to detect signs of toxicity or idiosyncrasy to the drug. If it is possible to determine the sulfonamide level in the blood, it is recommended that this be done. Levels should be maintained between 1 and 3 mg. per 100 c.c. of blood. This serves as a means of determining the degree of cooperation the patient is exercising, although the urinary excretion of the drug may also be used for this purpose.

4. Choice of drug and dosage.

a. Sulfanilamide—0.6 Gm. with the morning and evening meals for those over 9 to 10 years, or 0.3 Gm. with each meal for those under this age.

b. Sulfadiazine or sulfamerazine—1.0 Gm. daily, in one or two doses, for those over 9 to 10 years, or 0.5 Gm. daily for those under this age.

It probably will be some years before it is determined how long sulfonamide prophylaxis should be continued. There appears to be no special danger from administering the drug continuously in these amounts. Some children have

maintained themselves for periods of five to six years, some possibly longer, with apparently no harmful effects. Since the incidence of rheumatic recrudescences is considerably less after 16 years of age and 80 per cent of the recrudescences develop within five years after a rheumatic attack, it would seem that prophylactic measures should be carried out for at least five years after the rheumatic attack or until reaching 17 years of age. The studies of Coburn and Moore,[18] also Thomas and associates,[21] appear to indicate, however, that the same regime could be effective during adolescence and in young adulthood. It is hoped that future studies will clarify this point, at least until some superior method of prevention is developed.

We may close our discussion with the statement that a means of prevention of rheumatic recrudescences in children appears to have been found which can be carried on in an office practice, but this should be done only under the direction of the physician, and he should assume full responsibility by keeping the patient under his critical scrutiny at all times. In fact, the rheumatic subject should be as carefully treated as the diabetic, and should be maintained under continuous medical supervision. If these suggestions were fulfilled much could be accomplished in the way of prevention of rheumatic recrudescences.

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THE PEDIATRICIAN'S RESPONSIBILITIES IN THE DIAGNOSIS AND TREATMENT OF EARLY POLIOMYELITIS

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THE pediatrician's responsibilities in the diagnosis and early care of poliomyelitis are extensive, varied, and manifold. In this paper an attempt will be made to discuss some of the more important.

Many of the diagnoses are easily made by any doctor. Although no symptom, sign, or test proves the diagnosis, there is usually enough circumstantial evidence in headache, fever, vomiting, stiffness in neck, back, hamstrings, and other muscles, and also apparent muscular disability, to lead a physician at least to suspect the disease. The diagnosis is strengthened, in fact pretty much confirmed, by the finding in the spinal fluid of a slight or moderate increase in cells. Since the proportion of cases is increasing in young adults who are first seen by internists or general practitioners, the pediatrician is not always called upon to make the diagnosis. But these adult patients are apt to be admitted along with children to poliomyelitis services where a pediatrician is usually in charge and thus has the opportunity and responsibility to confirm the diagnosis and initiate treatment.

For each such new case, the responsibility at once arises for checking over the rest of the patient's family to seek out other possible illnesses that might be overlooked instances of infantile paralysis. Where there are small children it will be usual to find such cases, most commonly in the nonparalytic form. Multiple family cases are more and more being recognized, and it is now a well-known fact that the case of poliomyelitis with recognizable loss of strength is the infrequent case—the so-called "medical accident."

When poliomyelitis has been identified and the patient usually hospitalized, the pediatrician becomes the coordinator and often the initiator of all types of care: pediatric, nursing, physical therapy, occupational therapy, morale building and social rehabilitation, and finally orthopedic support and reconstruction. There are few if any illnesses in the treatment of which so much must be done by so many different specialists. It is obvious that one person must be responsible for the proper coordination of all these efforts being made in the patient's behalf.

In the average spinal case with involvement of a leg or an arm, the coordination of care becomes a matter of routine. A schedule of rest and relaxation, of proper nursing care, and of measures to combat increased muscle tension can be quickly and adequately instituted by any doctor at all familiar with the infection. But there are special manifestations of the disease the management of which requires experience, judgment, and skill. In general these are associated with bulbar cases and those with respiratory difficulties. Here the proper

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coordination of efforts may be lifesaving, or at least may help to minimize the aftereffects of the disease—to lessen the irreparable destruction found after the tidal wave of the acute infection has passed away.

Bulbar involvement is not usually difficult to determine. In addition to considerable fever, prostration, and a look of toxicity, there may be nasal regurgitation of fluid, a change in the quality of the voice, a lag in the motion of the palate with loss of the gag reflex; also accumulation in the pharynx of mucus, often sticky, increasing difficulty in swallowing, an increased rate and thready quality of the pulse; at times a temporary increase in the blood pressure, and then too often the development of a dusky pallor as the respiratory and cardiac centers fail to produce enough oxygenation.

The care of bulbar cases, especially those with extensive manifestations, involves many measures; among others being first reassurance of the patient, then the prevention of aspiration of food or mucus into the lungs, the provision of adequate oxygenation, the support of the heart, and if possible, the reduction of intracranial edema. It is of special importance that these patients be handled no more than is absolutely necessary. In case of uncertainty as to what to do, it is better to do nothing than to do something not needed: that is, "In case of doubt, don't." Or as the fracture surgeons say: "If you can't help, don't hinder." However, the bladder and bowel must not be allowed to remain distended, and attempts must be made to meet, at least to some extent, the patient's requirements for fluid, calories, and nitrogen balance.

In the care of these bulbar cases, an important part of the treatment is concerned with attempts at combating with dehydration the edema of the central nervous system. While the immediate result of the intravenous injection of markedly hypertonic solutions such as 50 per cent glucose, or those containing electrolytes, may appear beneficial in lowering blood pressure, lessening headache, and in general improvement of the patient, we have been told that there may be a "rebound" a few hours later to a worse state than before. We have been using intravenous injections of 10 per cent glucose, but there may be better measures, such as giving by mouth or gavage repeated small amounts, for instance 1 ounce, of a saturated solution of magnesium sulfate which is not absorbed from the alimentary canal and which promotes fluid elimination by the bowel.

In poliomyelitis patients with any form of respiratory difficulty, the responsibility of the pediatrician is great. He must first determine for each patient which factors are responsible for the inefficient breathing and what are their relative importance. These may be: first, damage of the respiratory center in the medulla—a very grave condition; second, pharyngeal involvement with accumulation of mucus in the airways mechanically obstructing breathing; third, any muscular tightness which may interfere with expansion or contraction of the thoracic cage; fourth, impairment of innervation of the muscles of breathing; and, fifth, a factor often not considered adequately, emotional disturbances—fear, panic, hysteria. Two or more of these five factors are usually present together, but for purposes of treatment it is of the utmost impor-

tance to recognize which factors should have primary consideration. For example, a bulbar patient who can neither cough nor swallow and who has much mucus in his pharynx will practically invariably do badly in a respirator, which, on the other hand, may save the life of a spinal patient who has so extensive a loss of innervation of the muscles of breathing that he will die of suffocation unless he is given prolonged artificial respiration.

The emotional disturbances that are always present in patients struggling for air often receive inadequate consideration. Time and again a panicky child, or even adult, who seems unable to get enough oxygen, can be calmed and steadied and enabled to breathe more efficiently by the inspiring and soothing influence of an expert doctor or nurse. Similarly, a patient who is obviously going to need a respirator will more rapidly relax and let the machine do the work if he is told in advance what to expect, and that he is merely to be given a little rest for a while, thereby allaying his fears.

Such decisions as when to put a patient in a respirator, and when not, when to take him out, when and how to give him oxygen, when and what fluids to give him, and what stimulation to use are all responsibilities the pediatrician must shoulder. Nor can one be dogmatic in stating what should be done. We believe there are good reasons for being very slow about putting a patient in a respirator so we usually wait until it is obvious that he cannot go longer without it, and we try to take him out later in the same day. We know there are those who advocate putting immediately into a respirator a patient with even a minimum of respiratory difficulty. We very freely give wet oxygen by nasal catheter, and we believe caffein is our best cardiac center stimulant, especially when supplemented by oxygen therapy. When we do use a respirator, we run it at the lowest negative pressure that will keep the patient oxygenated and at the rate he finds most comfortable. We believe positive pressure is contraindicated. Incidentally, any person who is going to supervise the care of a patient in a respirator should first himself experience having artificial respiration given him by such a machine.

There are a number of factors in the care of patients both while in a respirator and particularly after such a stay, that require special knowledge and consideration. Most of these patients cannot cough because of diaphragmatic weakness and there is the constant danger of a mucous plug in a bronchus, causing the sudden development of a massive atelectasis. A respiratory infection is, therefore, a serious complication in these patients. Many postrespirator patients develop hypertension, possibly due to chronic anoxia and passive congestion of the brain. Some have myocardial damage, determinable only by the electrocardiogram.

The function of the diaphragm must be carefully studied, as with a fluoroscope. Sometimes one half is found to be immobile, presumably in spasm; the other half flapping up and down, and therefore of no help to such intercostal breathing as may be present. We are finding the use of blow-bottles very helpful in aiding postrespirator patients to increase the use of their diaphragms and thus to increase their vital capacities.

Aside from the management of poliomyelitis itself, a ward full of such patients offers a pediatrician many interesting problems. In one small series of thirty or so cases this fall, we have had patients allergic to wool and to food, problems of over- and undernutrition, and a diabetic patient whose insulin dosage was disturbed by physiotherapy. We have had behavior problems, upper respiratory infections, kidney conditions—notably hematurias—and a number of skin abnormalities and single instances of various other problems.

The pediatrician must also constantly guard against cross-infections among the patients, and especially strive to prevent the spread of poliomyelitis itself to those not yet afflicted. Rigid individual isolation at least for the first week is observed, because washings of the nasopharynx of patients have been shown to contain the virus during that period, but precautions against fecal contamination should be observed for a much longer time; some authorities say for at least two months.

When poliomyelitis has struck, three great responsibilities in the matter of education belong to the pediatrician. Inasmuch as there is pretty general agreement that the sooner a poliomyelitis patient is put to rest the better is his prognosis, it is highly important particularly in the presence of the disease that parents be educated to put to bed at once any person who has acute illness, no matter how trivial. An apparent attack of indigestion, a head cold, or more especially a fever and headache may be an oncoming poliomyelitis. Many illustrations may be quoted of such patients who tried to continue normal activities and then developed serious, even fatal cases of this malady.

In the second place, parents need to be taught the nature of the disease and the aims of physiotherapy so that they can better cooperate in the treatment of muscle tightness and the re-education of muscle functions.

Perhaps the most important aspect of education, however, is in the field of morale. Parents need to be taught that patients left with weakened muscles must learn to be as self-sufficient as possible; must be encouraged to overcome their restrictions and to press on to achieve lives of usefulness to others and satisfaction to themselves. The pediatrician can find in this realm of morale-building his finest and most rewarding opportunities of service.

Thus, a group of poliomyelitis patients offer a pediatrician unusually varied and challenging responsibilities. In cases with bulbar and respiratory difficulties his skill may save life. For the many exigencies and complications that may arise, his constant supervision is essential. For tieing together the work of the many specialists who help in the treatment, his coordination of their efforts, and consideration of the patient as a whole are vital. For protecting and informing the community his duty is clear. Thus, although one's sympathies are constantly being aroused and one's emotions stirred, a pediatrician can well find satisfaction in serving the poliomyelitis patient.

THE RELATIONSHIP OF INFANTILE PARALYSIS EPIDEMICS TO COMMUNITY RESOURCES IN THE TREATMENT OF PATIENTS

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SINCE the severe epidemic of 1916 certain areas in the United States have had a relatively low incidence of infantile paralysis, despite frequently recurring major epidemics in adjacent areas. The city of Rochester, N. Y., and the surrounding countryside for a radius of approximately one hundred miles was one of those regions which remained relatively immune to attacks during the annual recurrence of this disease for a period of nearly thirty years.

For a period of twenty-eight years following the 1916 epidemic there was an average of 11 cases reported in Rochester, N. Y., 31 cases in Syracuse, N. Y., 38 cases in Buffalo, N. Y., and 82 cases in Toronto, Ontario, Canada. For this same time interval the median for Rochester was 7; Syracuse, 11; Buffalo, 13; and Toronto, 36. During this time the relatively low incidence of infantile paralysis in Rochester was repeatedly discussed although the recognized discrepancy was never explained.

On the basis of confirmed admissions to the Strong Memorial and Municipal Hospitals, the epidemic totaling 259 infantile paralysis patients began on May 25, 1944, and ended on December 28 of the same year. The incidence was thirty-seven times greater than the median for the past twenty-eight years.

The rapidly increasing number of cases in July and August revealed that the Strong Memorial and Municipal Hospitals combined under the School of Medicine were the only institutions which could provide the resources necessary for serving the community in this emergency, which was characterized by demand for care of patients during the acute and convalescent stages.

The difficulties thus suddenly created were more readily resolved because of the past two years of research under grant in aid from the National Foundation for Infantile Paralysis, Inc. During that time-interval a close correlation had been established for cooperation between the Department of Pediatrics, Department of Medicine, and the Division of Orthopaedics in the Department of Surgery.

Early in the emergency it became quite clear that the background of common interest thus created was a great advantage. Those responsible for making decisions were already aware of the need and able to agree upon an effective plan based upon known requirements dictated by the characteristics of infantile paralysis in the absence of specific treatment for the control of disabilities which follow in its wake.

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The plan was as follows: During the two weeks of isolation, the care of the patients was directed by the Department of Pediatrics, or the Department of Medicine in consultation, and with cooperation of the Division of Orthopaedics. All patients were transferred to the Orthopaedic Service at the end of two weeks after admission.

The latter service evaluated all patients on the basis of distribution and degree of muscle weakness or paralysis and determined the disposition, the duration, and the form of treatment to be given. Provision was made for following of these patients for a period of two years after the acute onset.

But, such an emergency demanded something more than beds, diagnosis and good treatment for patients. Simultaneously it was necessary to provide special resources in addition to those through which the hospital maintained contact with the community. Pertinent information regarding each patient was made available for parents, referring physicians, City and State Health Bureaus, social agencies, including daily reports to the hospital administration, and Visiting Nurses Association which provided trained personnel for the care of patients at home as directed by the hospital staff.

Muscle examinations were made within seventy-two hours following admission on all patients except when contraindicated by acute illness or local discomfort. At monthly intervals these examinations were repeated until the restoration of strength in weakened muscles returned to normal or reached a "plateau" beyond which there was no further improvement. A written monthly summary of each patient's progress was sent to those parents, the referring physicians, and those agencies interested either in the further treatment of the patients or in gathering information for the purpose of studying the epidemic as such.

All patients most severely disabled were hospitalized until they were physically independent with apparatus. After the acute and convalescent stages, patients who had residual muscle weakness were followed in a special clinic held once each week.

These were the practical resources developed by the dictation of an emergency which had no memorable likeness in this community in more than two decades. Precedents were not established by previous experience, but this was not so in the epidemic of 1945. The plan developed the previous summer required no significant modification, its application again proved effective in providing most for the patient, because the various relationships which the latter bore to the community and the state were properly considered as an essential part of treatment.

To some, it may appear that this broad base is too much to be practical in many places. How frequently it has been done is not known, but the indications for activating such a plan are defined by many factors. Without it patients may be treated effectively in the acute stage, but many parents are unnecessarily worried. The referring physician is uninformed as to progress and disposition and his relationship to parents and hospital become fouled. City and State Health Bureau statistics are exposed to inaccuracy, the services which they

are equipped to render to the community cannot be effective in such an emergency. Resulting partial or complete isolation of social agencies makes them unable to serve their respective functions. Visiting nurses do the best they can without supervision. In summary: the failure to provide for correlation of all these resources makes a difficult task more troublesome; moreover, it is safe to add that patients will not be as effectively treated during the convalescent and chronic stages of the disease when they most need direction for rehabilitation and protection from overexertion.

The requirements necessary for the correlation of the respective advantages rendered to infantile paralysis patients are common to most communities. Prevailing professional interest has financial support from the County Chapter of the National Foundation for Infantile Paralysis, Inc. Personnel is thereby available to execute the plan which provides for the most effective application of professional and community resources to the interest of all patients during and after the emergency created by a severe epidemic.

THE ROLE OF PHYSICAL MEDICINE IN POLIOMYELITIS

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THE intelligent care of the aftereffects of poliomyelitis is based on the premise that the extent to which a patient's functional capacity is ultimately restored is not dependent alone on the actual number of nerve cells destroyed during the acute stage of the disease, but also on the effectiveness with which the remaining cells can be put to use. In this over-all program of rehabilitation, it is the role of physical medicine to achieve three objectives:

1. To salvage all neuromuscular units left anatomically intact after invasion of the nervous system by the virus and to train these units to function with the highest possible coordination.

2. To prevent or minimize any musculoskeletal deformity that would handicap the most efficient use of these remaining neuromuscular units or render any indicated orthopedic apparatus or surgical procedure less effective.

3. To establish patterns of functional motion that will insure the most effective use of any necessary orthopedic apparatus and the maximum value from any necessary orthopedic procedure.

To appreciate fully this responsibility of physical medicine requires a complete understanding of the over-all program of care. Careful study of the various programs of care in use today reveals an amazing uniformity of approach in their attempt to achieve maximum rehabilitation. Almost all programs proceed in orderly progression through seven blocks or steps of treatment. These steps are summarized in Fig. 1.

If we appreciate the purpose of each step, we realize that the ultimate functional capacity regained by the patient is largely determined by the ability of the attending medical staff to complete each step thoroughly before undertaking the following one. There is now, as there has always been in the past, great controversy over specific routines and techniques in the over-all program. This controversy is of great value and will, and should, continue until we know a great deal more than we do now about the pathology of acute anterior poliomyelitis and the physiology of muscles and nerves. Perhaps when all these facts are known, a single method, complete in all its details and acceptable to all experienced investigators, can be formulated.

STEP 1: SAVE PATIENT'S LIFE

It may seem unnecessary to indicate that the program of rehabilitation begins by first saving the patient's life. However, it is well to keep in mind that poliomyelitis is a potential danger to life during the first few days of the acute stage. Treatment during this stage is intelligent, supportive medical and

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nursing care, with the attending personnel on the alert to recognize and care for the first evidence of any emergency that might endanger the patient's life. The application of any form of physical therapy not consistent with this plan must not be permitted. It is not unusual to find patients with hot packs applied from head to toes at a time when that patient is fighting for his life to breathe against an accumulation of mucus in his throat and the added weight of hot packs on his chest.

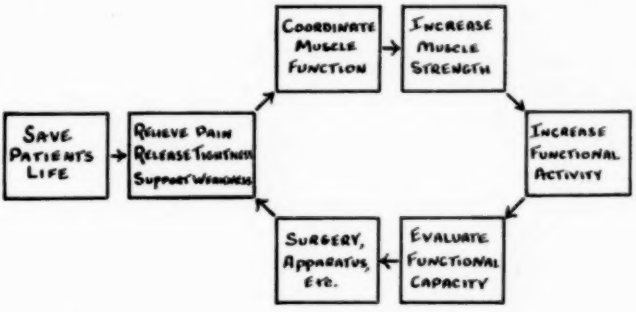

Fig. 1.

On the other hand, the judicious use of such physical agents as moist heat and passive motion may be indicated to relieve muscle tenseness and pain and thus allow the patient to rest more easily. Moist heat and gentle passive motion applied to the group of posterior neck muscles when the head is held retracted by spasm in these muscles may facilitate swallowing and breathing. In those patients where spasm and pain in the intercostal, abdominal, and back muscles are limiting breathing, careful attention to position and application of moist heat and gentle movement may be of almost specific value. It should be thoroughly understood that the application of any physical agent must be used with caution and should be specifically prescribed for each patient consistent with good medical judgment.

STEP II: RELIEVE PAIN, RELEASE TIGHTNESS, SUPPORT WEAKNESS

It is with Step II that our program of aftercare really begins. The purpose of this step is to prepare the patient for the initiation of voluntary motion. It should be readily appreciated that coordinated action of muscle groups acting on any bodily segment is impossible if motion of that segment is limited by pain and/or by limitation of joint motion. It is a basic principle of muscle re-education that restoration of effective use of muscles cannot be obtained and should not be attempted until a painless range of passive motion is possible in all segments upon which the involved muscles act. The relief of pain and release of all tightness in muscle and joint is thus the first step in muscle re-education. Until this is done, we can never fully regain the maximum use of the remaining skeletal muscles. The relief of pain and the release of tightness are accomplished by time, plus the use of intelligently prescribed sedatives, heat, and passive

motion. As in the use of all therapeutic agents, the type and frequency of application of heat and motion depend on the reaction of the patient. The immediate goal is painless passive mobility. There is no magical formula to achieve this end by physical medicine except in the intelligence and responsibility of the attending medical personnel.

It is also in this step that we begin our endeavor to prevent musculoskeletal deformities. Deformities (except for atrophy and weakness which are surely deformities but in the main not preventable) have just one cause: persistent faulty alignment of bodily segments which result in distortion of bones and joints and fibrous contractures of muscular and ligamentous tissue. In the early convalescent stage of poliomyelitis, such malalignment results from persistent, faulty posture in bed, caused by such factors as pain, muscle weakness, faulty beds, and the weight of bed clothes resting on the weakened extremities. Therefore, it is of utmost importance not only to preserve normal bodily mechanics and alignment by the early restoration of mobility in muscle and joint as mentioned, but also to prevent persistent faulty posture by the most effective methods possible. An effective support is not only one which holds the segments in proper position, but also one which in no way interferes with the other components of early care. It should be quite evident that the type of support will depend on the quality of available medical supervision. If little adequate medical supervision is available, a bivalved plaster cast is more effective than pillows or sandbags. Under intelligent supervision, an orthopedic bed, a footboard, and properly placed pillows are all the actual equipment needed to prevent deformities. Rigid supports are a poor compromise for good care.

STEP III: COORDINATE MUSCLE FUNCTION

Step III is probably the most important and certainly the most difficult step in the entire program. It is in this step that physical medicine in poliomyelitis justifies its existence. It is in this step that physical medicine has made its greatest strides in the treatment of poliomyelitis, not because any outstanding discoveries have been made in functional anatomy or bodily mechanics, but primarily because physical medicine has been given an opportunity to use its skill on bodily segments properly prepared for muscle re-education. It is obvious that the success of this step is absolutely dependent on the thoroughness with which the painless and complete mobility of the segment has been restored. The purpose of Step III is to train the patient to use every available muscle fiber with the greatest possible efficiency. It is a continued source of amazement and gratification to see the extent of functional capacity that can be developed by patients with very little muscle power but highly developed coordination. It must be stressed that coordination and power are not the same. Power without coordination may be disastrous to the patient recovering from poliomyelitis. Experience has taught us that all muscles in the involved segment do not recover with the same speed. The rate of recovery of an individual muscle group is not solely dependent on the physiologic state of the motor neuron but is influenced by many intrinsic and extrinsic factors too detailed to mention here. If, as

each of these individual muscles come under voluntary control, no attempt is made to coordinate their use, faulty habit patterns of motion will be built up by the patient through the use of these stronger and more easily available groups to the total exclusion of the weaker and thus less available groups.

The development of a truly high degree of coordination in the patient with moderate to severe involvement demands the attendance of a highly skilled physical therapist. Not all physical therapists, regardless of intelligence and training, have the qualities of personality, patience, and meticulous attention to detail so essential to good muscle re-education.

GLUTEUS MAXIMUS	N
ILIO PSOAS	P
SARTORIUS	P
TENSOR FASCIAE LATAE	N
HIP ABDUCTORS	N
HIP ABDUCTORS	P
INWARD ROTATORS	N-
OUTWARD ROTATORS	N
QUADRICEPS	P
HAMSTRINGS INNER	N-
OUTER	N-
GASTROCNEMIUS	N
ANTERIOR TIBIAL	P
POSTERIOR TIBIAL	F
PERONEALS	N
EXTENSOR LONGUS DIGITORUM	G
EXTENSOR BREVIS DIGITORUM	F+
EXTENSOR PROPRIUS HALLUCIS	G+
FLEXOR LONGUS DIGITORUM	G+
FLEXOR BREVIS DIGITORUM	N
FLEXOR LUMBRICALES	N
FLEXOR LONGUS HALLUCIS	N
FLEXOR BREVIS HALLUCIS	N

Fig. 2.

It is possible to determine the quality of the physical treatment carried out on an individual case by simply studying the functional muscle test rating of that patient. A difference of over 15 to 20 per cent in the functional rating of antagonistic muscles means one of two things: either that the early treatment was at fault and the purposes outlined in Step II were ignored, thus making good muscle re-education impossible, or that the program of muscle re-education was neglected or faulty.

Rarely a patient may be so inherently incoordinate that even the finest technician fails to attain proper muscle use. Examination of Fig. 2 reveals marked unbalance between the strength of flexors and extensors. This patient

was immobilized in a plaster cast for six months and then permitted rapid resumption of activity without supervision or guidance. If we simply recall our neuroanatomy of the spinal cord, we can readily see that such spotty involvement of muscles in each individual segment cannot possibly be the result

	8/14/43	10/30/43	1/3/44
TRANSVERSALIS			
GLUTEUS MAXIMUS	O	P+	F
ILIO PSOAS	O	P	P+
SARTORIUS	P	P+	P+
TENSOR FASCIAE LATAE	O	P	P+
HIP ABDUCTORS	Tr.	P+	F
HIP ABDUCTORS	P	P	P+
INWARD ROTATORS	O	P	P+
OUTWARD ROTATORS	O	P+	F
QUADRICEPS	Tr.	P+	F+
HAMSTRINGS INNER	O	P+	P+
" OUTER	O	P-	P+
GASTROCNEMIUS	Tr.	P-	P+
ANTERIOR TIBIAL	P	F	F+
POSTERIOR TIBIAL	P+	F+	F+
PERONEALS	O	P	P+
EXTENSOR LONGUS DIGITORUM	O	Tr.	P+
EXTENSOR BREVIS DIGITORUM	O	P	F
EXTENSOR PROPRIUS HALLUCIS	O	P+	F
FLEXOR LONGUS DIGITORUM	O	Tr.	F
FLEXOR BREVIS DIGITORUM	O	Tr.	P+
FLEXOR LUMBRICALES	O	Tr	P+
FLEXOR LONGUS HALLUCIS	O	Tr.	P+
FLEXOR BREVIS HALLUCIS	O	Tr.	P+

Fig. 3.

of poliomyelitis directly but is due to haphazard motion and development of faulty habit patterns during the convalescent period. In Fig. 3 is shown the diffuse and balanced return of strength that follows adequate convalescent care.

STEP IV: INCREASE MUSCLE STRENGTH AND STEP V: INCREASE FUNCTIONAL ACTIVITY

Steps IV and V are taken almost simultaneously. The increase of strength is obtained by carefully graduated activity, and increased activity further increases strength. While these steps are of the greatest importance to the patient, they are almost an anticlimax to the specialist in physical medicine. Actually, once the goal of maximum coordination has been reached and efficient habit patterns of motion deeply grooved, the patient's activities are limited only by his strength and endurance. I say this with full appreciation of the danger

of developing musculoskeletal deformities from faulty bodily alignment or mechanics during activity. As long as the patient remains coordinated, there can be no faulty bodily alignment or mechanics, unless the activity attempted is beyond the strength of the muscles called into action. It thus becomes the duty of the physician in charge of that patient's care to prescribe activity consistent with the ability of the patient to perform the activity and remain coordinated.

If a certain activity, walking, for example, is indicated, it must be determined if the patient can walk and still retain coordinate muscle action. If, in order to walk, a patient must resort to faulty bodily mechanics such as locking the knee in hyperextension or twisting the trunk in an unsightly manner, then walking must either be stopped or adequate assistive or supportive apparatus provided to enable the patient to carry out that activity in as nearly normal a manner as possible and with the correct coordination of muscle action.

Fig. 4.

More specifically, suppose a patient has weak dorsiflexors of the feet. If walking is attempted, an abnormal gait will result from the necessity to raise the weakened foot by excessive hip and knee flexion to keep the foot from dragging on the floor. In this case, a foot-drop support (Fig. 4), and there many simple and efficient ones, will hold the foot in correct position and allow normal mechanics of hip and knee in walking.

An overhead spring sling for a weakened shoulder girdle is probably the best example of truly assistive apparatus (Fig. 5). With this apparatus, the

arm is abducted to an angle where efficient motion of the shoulder girdle can be obtained and weakened muscles (deltoid, rotators, serratus magnus, etc.) are put in a position to act functionally and coordinately with but a fraction of their normal strength. Correct use without strain is encouraged and, with use, increased strength can be expected.

Fig. 5.

STEP VI: EVALUATE FUNCTIONAL CAPACITY

Eventually we come to a point in the program of convalescent care when we have done as much as we feel can be done by muscle re-education and graduated activity. In the mild case, this might have required but a few weeks; in the severe cases, perhaps several years. It is then that we carefully evaluate the patient's functional capacity in terms of that patient's ability to take his place in a normal environment. We want to know what that patient can do safely and practically. If his functional capacity is such that he can return to a happy and effective life, our program is complete. If, on the other

hand; his functional capacity is limited, we must determine if there is anything else that we can do. This necessitates a seventh step.

STEP VII: SURGERY, APPARATUS, ETC.

Step VII is a step of reconstruction and compromise. If an adequate program as outlined in Steps II through VI has been carried out, and the patient is still incapable of safe and practical locomotion, some reconstruction of normal musculoskeletal relationship or some compromise of normal coordination of muscle groups may enable the patient to achieve an independence of action otherwise not possible. The means to be considered are orthopedic surgery, the use of special apparatus, the development of trick movements, and the guided use of muscle substitution.

The results obtained by the orthopedic surgeon depend on the thoroughness of the conservative care during the period of convalescence. Certainly, if normal skeletal alignment and joint mobility have been preserved, the surgeon can do his work more efficiently.

To obtain the maximum value from orthopedic surgical procedures, postoperative care should revert back to Step II in the over-all program of care and proceed through Step VI for re-evaluation (Fig. 1). Patients may be taken through these steps of treatment many times before greatest possible functional capacity has been restored.

The training of patients in the use of trick movements and muscle substitution to increase functional capacity is a highly specialized phase of physical medicine.

SUMMARY

Physical medicine has an important and well-defined role in the treatment of poliomyelitis. It can be considered to have fulfilled its responsibility in the over-all program of care if:

1. All available neuromuscular units have been trained to function with the highest possible coordination.

2. All deformities that would limit the most efficient bodily mechanics have been prevented or minimized in so far as possible.

3. The most effective use of any necessary orthopedic apparatus or surgical procedure has been obtained.

THE PSYCHOLOGIC AND PSYCHIATRIC IMPLICATION OF POLIOMYELITIS

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THE general attitude of most physicians is that infantile paralysis is a simple disease characterized by permanent damage to anterior horn cells, with consequent paralysis, atrophy, and deformities in severe cases, and negligible or absent motor deficits in milder cases. It is, however, evident that any such formula ignores the possibility that emotional and intellectual components may complicate the picture. In this paper the conception that poliomyelitis is confined to anterior horn cells is challenged and evidence is presented which seems to justify reconsideration of the whole problem.

It is well known that many children have symptoms which suggest widespread involvement of the central nervous system quite comparable to that seen in other types of virus encephalitis. It is agreed that damage to tracts is rarely seen and frank convulsions or gross mental defects are practically unknown, but there is no adequate information about changes in the pattern of mental development or about emotional disturbances after the subsidence of the acute process.

The obvious approach to a problem of this sort is to bring the methods developed by psychologists into use. It is not enough to calculate intelligence quotients based on standard tests worked out on unhandicapped children. We need methods which reveal irregularities, lack of sustained attention, and lack of comprehension of form and ability to deal with abstractions.

There is abundant evidence that studies of this sort are relevant after cerebral injury from many causes. The observations of Kurt Goldstein, Elizabeth Lord, and others are conclusive.

In children the major difficulties revolve around the fact that we cannot proceed effectively until we find a method of checking deviations against a reasonably reliable curve which represents the progress which could be predicted if disease had not intervened. Every pediatrician has to consider development at every turn, but the disorders of cerebral function cannot be solved without peculiarly close attention to this element. A revision of some ordinary medical terms may be helpful.

In adult patients convalescence and recovery are easily defined. It is usual to define convalescence as a process which takes place between the end of active disease and complete restoration to a previously satisfactory general state. At the end of convalescence the patient is back where he started from. It is relatively simple to deal with the terms even when isolated phenomena such as paralysis persist by making suitable reservations.

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In children, however, a mere restoration to a previously achieved state is obviously not enough. We have to produce evidence that the child is advancing at the rate which was suitable for him and that he has not been held back by the fact that he has missed experience which would have been encountered normally.

Then we cannot dodge the consequences of the admitted fact that we do not expect children to be self-maintaining. Therefore, the adults and the children who make up the child's social environment are factors which cannot be ignored.

With these considerations in mind we have attempted to work out a method of investigation which might reveal intellectual and emotional deviations from predicted curves of development.

Using experience with many types of encephalitis as a basis, a series of cases of infantile paralysis have been observed over a considerable period. In a general way the strictly psychometric approach has not seemed particularly useful, since gross general defects as revealed by estimation of intelligence quotients have not been seen. As psychologic procedure the qualitative rather than quantitative approach was used. Visuomotor, learning tests, reasoning tests, and general sensorimotor tests were of most striking value.

Beyond these technical tests observations were carried on concerning the quality and type of mental functioning. The possible bearing of prolonged immobilization and hospitalization was studied.

The material consisted of a series of seventy children with definite poliomyelitis. About fifteen of these patients were regarded as having cerebral involvement, whereas the rest were not so classified.

Some of the cases have been followed for several years and others are very recent. In the cases which had evidence of cerebral involvement, visuomotor deviations which impaired comprehension of spatial relationships were found in almost all cases in some degree. It is quite clear that disorders of this sort handicap the child if he is required to deal with the symbols which are so necessary in school. Difficulties in learning habits, lack of sustained effort, short attention spans, and irritability were frequently found.

The spinal cases, as defined by the usual criteria, were frequently somewhat handicapped in the same way, but the difficulties were neither as severe nor as enduring as in the encephalitic group.

It is the universal experience of pediatricians that children from one to three who have to stay in hospitals for long periods do poorly. If immobilization is added to hospitalization in the ordinary sense it might reasonably be expected that difficulties would increase. From observation of development it is clear that experience and activity are necessary for early development and a study of this element is being pursued. Enough information is available to make it clear that immobilization is an important barrier to orderly progress.

Another series of difficulties arise in the hospital from the concentration of attention upon deformity. Other problems arise from the inevitable lack of time for arranging matters so that a child can understand what is going on and what is done to him and how long he is to stay. Since there is no age limit for the disease it is clear that some patients are old enough to understand or mis-

understand every bit of medical conversation, but almost none of them are mature enough to force the medical staff to deal with their anxieties.

The situation does not lend itself to any easy solution. The superb skill of orthopedists in dealing with the deficits in the anterior horn cells and resulting disabilities is recognized. Most of the orthopedic thinking is based on the simple process of subtraction. So many units are gone, so many were there to start with. The sum is mathematically calculated and steps are taken to exploit the remainder.

If, however, the problem is not so easily stated or so readily solved a new approach is justified. It seems to us clear that there are genuine though perhaps not permanent intellectual deviations in certain cases. In all cases the management of the children is different from that of adults.

During the stay in the hospital the younger group suffer from absence of activity and almost certainly from absence of the warmth of affection which they should be having. All children are almost certainly subjected to anxieties which are not readily or automatically resolved.

After discharge other problems arise and seem to call for proper guidance from the psychologic point of view.

It seems important to mention the emotional disturbances caused in children who, back in their own circle, find themselves unable to compete socially, either by the nature of their physical handicap itself or by their parents' increased anxieties, and by necessity for rest, exercises, and the like. In other cases the parents' attitude seems to lead in an opposite direction. The child is urged to compete and to overlook his own difficulties. In other instances the child's reaction to regained freedom of activity leads to abnormal aggressiveness and exuberance.

The material which we have collected suggests that a serious effort should be made to protect these children from as many of the consequences of the disease as possible. The role of psychologic appraisal has been suggested. The method of instruction of children, parents, and teachers is so dependent on the personnel of the hospital that it is impossible to lay down rules, but it seems clear that mental and emotional difficulties are just as real a handicap to certain children as the paralysis is to others.

It is our impression that the inclusion of psychologic study is a reasonable and probably an essential part of the management of infantile paralysis. We are quite aware that behavior does not depend upon intellectual equipment alone, and we are equally sure that no hospital management can prevent all emotional difficulties.

It is quite evident, however, that almost every case of infantile paralysis will be cared for in hospitals during the acute stage and in specialized clinics later. What is done or not done in hospitals is of enormous importance. If by subjecting hospital procedure to review we can help the victims of infantile paralysis to make the transition from immobilization to activity and from the hospital to home and school with minimal difficulty, we need to appraise the intellect and consider the emotions and keep close contact with parents and child.

CHILD WELFARE WORK IN BRAZIL

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WHEN Dr. Martmer asked me to discuss child welfare work in Brazil, several things came to my mind as I sat thinking of the possibilities. First, how interested would a group of American pediatricians be in Brazil? Having just recently returned from two and one-half years in Brazil, it has been my observation that there are not very many people in the United States who are particularly interested in Brazil, or any other Latin-American country as far as that is concerned. Physicians as a group are rather adventuresome and always appear to be interested in new things and new experiences. After all, physicians are always seeking new knowledge, they are curious people by training, and one sees the *National Geographic Magazine* in many waiting rooms. Maybe you would bear with me on a sort of travelogue.

I also anticipated a question, "What on earth were you doing in Brazil?" I think that probably every person whom I have encountered has asked me that question. Therefore, as an introduction to some of the health problems in this great country to the south of us, I shall attempt to give a brief over-all picture of Brazil and an explanation of how an Army Medical Corps officer happened to be assigned down there.

It is impossible to discuss the health problems of Brazil without delving into its geography, civilization, economy, politics, and what not. This is true of any country as far as that is concerned, because the standard of living, the level of education, and the willingness of politicians to support health progress are the determining factors in how great the advance may be.

Sometimes before the United States was plunged into war, it was recognized by our political leaders that it would be to our advantage to have our Latin-American neighbors as friends. We had not paid much attention to them since the last war, but certain European powers had. These powers were making a great effort to control the trade of South and Central America. It was also true that Latin America looked to Europe and particularly France and Germany for cultural and scientific leadership, just as we had done some years before. These conditions helped to cement friendships. With a view then of trying to improve our own position, the so-called Good Neighbor Policy was inaugurated. Through fair trade treaties and loans to assist in economic development during the prewar years, we found ourselves in a fair position as far as our neighbors were concerned when war actually confronted us.

Shortly after Pearl Harbor, in January, 1942, the Foreign Ministers of the various American Republics gathered in Rio de Janeiro to discuss the defense of the Western Hemisphere and ways in which all could cooperate in the prosecution of the war against the Axis. None of these countries had large armies or

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navies and it was therefore evident that the United States would have to undertake most of this defense. There were thousands of miles of coast line that had to be protected, and many more thousands of miles of sea lanes that had to be kept open. In 1942 the Germans and Italians were running over North Africa and even attacks on South America were feared. With Axis bases in South America we could not have defended the Panama Canal, and even defense of the United States would have been difficult. Furthermore, we had to develop supply lines to Africa and Europe and protect them. We were granted the privilege of establishing bases as we needed them throughout Central and South America to carry out these objectives. The large bases in Brazil formed the main supply line for the early fighting in North Africa and later were links in the air line that extended to India and China. Active submarine patrols and the escorting of conveys were also carried on from those bases.

Probably of as great importance as the bases were certain strategic materials that were obtained from some of these countries. We in the United States have always been very self-sufficient people. We were the "Arsenal of Democracy," we possessed the "know how" and ability to produce great quantities of supplies. We produced more steel than the rest of the world combined and thus more machinery of war. But, to produce steel one must have manganese. There is little manganese in the United States, and practically all we used had to be brought in from the outside. This was one of the very important items obtained from Brazil. To make guns, bombs, and planes, machine tools were necessary. To make machine tools industrial diamonds were needed and these came from Brazil. For the thousands of radio and radar sets used on ships and planes, quartz and mica were needed. We had very little and normally our chief source of supply was India, which was then cut off from us. These minerals were so critically needed that a large air transport service flew them from Brazil to the United States. There were many other items, perhaps not so critical, such as vegetable oils, hemp products, rubber, cinchona, iron, copper, nitrates, and tin that were imported in huge quantities. In fact, our importation of these products went up about five hundred per cent during the war period.

As many of these industries had not been very highly developed, one of the big problems was to devise ways and means of increasing the production to meet the demands. It was necessary to develop mines and transportation facilities and to furnish technicians to operate them. Large labor forces had to be recruited, and in one instance 65,000 people were moved on one project. Most of these operations were located in frontier territory. Disease was the chief factor in keeping people from work. In many areas it was not unusual to find 75 per cent of the people with chronic malaria, and in addition hookworm, the dysenteries, and typhoid fever were rampant. It was impossible for these people to do a day's work or even a good hour of hard labor a day.

To combat this combined problem of protecting the health of our troops and the people engaged in procuring these critical materials, a public health program was inaugurated as a cooperative endeavor. The Brazilian Ministry of Health

and the Institute of Inter-American Affairs supplied funds and personnel to conduct the program. Army physicians, sanitary engineers, and other technicians were assigned to the Institute of Inter-American Affairs to supervise and carry out this work. This special health service was responsible for the health work and medical care in the areas adjacent to bases, the mining regions in Central Brazil, and the vast rubber and vegetable oil producing Amazon Valley. The entire area involved was larger than that of the United States and was mostly rural and undeveloped. It was to this work that I was assigned, which was of a general public health character, as you can see. It was all part of a coordinated political, military, and economic program to further the cause of the Allies.

In order to comprehend the necessity for the creation of such a health program one must understand the problems as they existed in Brazil at the beginning of the war. Brazil has probably advanced more than any other Latin-American country in its medical education and in its public health services. Though Brazil is not a highly industrialized nation it is developing rapidly in this direction in a few sections of the country. The same might be said of education in general, living conditions, and other criteria of an advanced civilization. The result has been the creation of a country with very glaring contrasts. The large population centers of Rio de Janeiro, São Paulo, Belo Horizonte, Porto Alegre, and a few others are highly developed, modern cities with most of the advantages of our cities. Yet in the smaller communities and rural areas there has been little progress and there are few modern advantages.

The health and medical work has been well developed in these larger centers along with the other modern refinements, but it has lagged greatly in the less populous areas. Brazil being a very large country with not too great a national income, the rather natural and logical course has been followed to make improvements and advances where the largest number of people would be affected. Our work was intended then to augment and supplement the work that was already being done by the existing National and State Health Departments, and particular care was taken to avoid duplication of effort. As the Army and Navy bases, as well as the vast mining and rubber areas, were located mostly in the less developed regions which did not have well evolved health programs, the task fell to our lot of formulating and executing a very basic health program.

Our first undertaking, naturally, was to familiarize ourselves with the health problems in the areas for which we were to be responsible. This necessitated a study of the country, its geography, climate, population distribution and trends, vital statistics, industries, food supply, and living conditions, as well as surveys of the health conditions and the existing medical and health facilities.

As already mentioned Brazil has advanced greatly in its medical education. There are a half dozen good medical schools and several others that are not bad. About two-fifths of the physicians south of the United States are located in Brazil which contains about one-third of the population of Latin America. Roughly there are 20,000 physicians for 45 million people in that country, or one physician for every 2,500 people. The same dislocation exists in Brazil as in the United States, only to a greater extent, in that most of the physicians are

located in the large cities and very few are located in the less developed regions. The same applies to the activities of the National and State Health Departments, as I have already explained.

In the metropolitan areas the various medical specialties are well taken care of, and fairly good medical care is available either through the private practitioners or public clinics.

The preventive medical work of the country is directed by the National Health Department. This department handles more or less special problems that are nationwide in scope. Many special services have been developed that have done outstanding work.

Yellow fever, which once was a great scourge, has been practically eliminated, and a very active campaign of vaccination against yellow fever is still carried on.

Some of the finest antimalaria work in the world has been done in Brazil. The campaign in the Northeast against the Gambia mosquito, which was conducted in cooperation with the Rockefeller Foundation, was probably the outstanding antimalaria campaign in all medical history. One need not worry about acquiring malaria in the larger cities. The vast interior is so extensive and the problem is so complicated that it has been a very great undertaking on a nationwide scale.

A leprosy service that has made a fine record is maintained by the National Health Department. Probably the best leprosy work in the world has been done in Brazil. Fine leprosariums have been established for the segregation of infectious cases. Early diagnosis clinics and also places where contacts can have routine examinations are operated throughout the country. A private agency for protection against leprosy has provided a chain of preventoriums where children of lepers may be placed for protection and observation.

There is a tuberculosis service that is becoming more active all the time. The tuberculosis problem is very great as I shall attempt to show later on. For Brazil to try to institutionalize active cases as we have done would be financially impossible. There are a fairly large number of tuberculosis hospitals into which the patients with the more advanced cases ultimately go, and more of these hospitals are being planned all the time. However they are attacking the problem through early diagnosis and ambulatory collapse therapy. Centers have been developed in all metropolitan areas where examination, including x-ray, is available. Mobile units are constantly being increased so that outlying districts can be reached with these early diagnosis campaigns. The micro-x-ray technique was developed in Brazil and is used extensively. These small pictures reduce the cost of x-rays considerably.

Lack of public health nurses has made effective home visits impossible, so that really active case finding and follow-up work cannot be done. In one small town I am familiar with, out of the 40,000 population, 27,000 had been x-rayed during the past two years. In these same centers and mobile units there are facilities for giving pneumothoraces, and this is the principal means of treatment and of reducing infectivity. In this one city just mentioned, they did 17,000 pneumothoraces during the same two-year period.

There is still the great problem of poverty among so many of the people, which for some time to come will retard any antituberculosis program. One cannot help but feel, however, that Brazil is on the way to developing a good antituberculosis campaign.

There is also maintained a service of BCG. This was started as a private endowed organization seventeen years ago. It is now semiofficial and receives some government support. They prepare their own vaccine and provide facilities for the vaccination of all newborn infants. This service is large enough to reach practically all in the larger cities, but it is carried out through the local health agencies in small communities where the service may be inadequate or lacking entirely.

This vaccination program against tuberculosis was very interesting to me, as it is probably the largest program of its kind in the world today. It was started in 1927 and just recently a seventeen-year report was made by its director, Dr. Arlindo de Assis. The vaccine is made from cultures obtained from the laboratory of Prof. Calmette in Paris and is carefully prepared and checked. Calmette's original technique has been changed gradually until now they use a live culture vaccine of fourteen days' growth instead of the usual twenty-five-day growth. The dose has been increased from 3 cg. to from 9 to 20 cg. orally. Revaccination after varying periods of time is practiced and also the vaccination of older children and young adults where they are anallergic. At first only those in contact with tuberculosis were vaccinated, but now the vaccination of all newborn infants is attempted.

During these seventeen years there have been 161,152 newborn infants vaccinated in Rio de Janeiro. At this rate more than one-half of the registered newborn infants in Rio are now being vaccinated.

Outside of Rio about 180,000 other newborn babies have been vaccinated making a grand total of around 340,000 infants receiving BCG.

A control experiment has been carried on in Rio for five years. There are 1,426 families under observation where active tuberculosis has been verified, usually in the parents. In this group of families 2,050 children were vaccinated with BCG at birth and 2,598 children were not vaccinated. These children were usually brothers or sisters and are living together with the siblings with active cases.

After five years of observation in this group, Dr. de Assis makes the following statement:

"In the vaccinated group, tuberculosis occurred in 20.8 per cent and was usually benign in character. Death from tuberculosis occurred in 2.1 per cent.

"In the unvaccinated group, tuberculosis occurred in 39.6 per cent and death occurred in 13.2 per cent."

I am not certain just what the diagnosis of tuberculosis was based on, but I am of the opinion that it was on the basis of demonstrable x-ray lesions. A positive tuberculin test was apparently not regarded as evidence of tuberculosis.

In addition to this control group over 41,000 other children have been under regular observation.

Brazilian physicians are practically all enthusiastic about BCG vaccination and it is assumed that it is without harm and that protection does occur.

I had many arguments over the pros and cons of allergy and immunity, and personally I am not convinced. It will take more time and better controls to tell the story. These families under observation are likely to take some other precautions learned of through contacts with the physicians and nurses. Also I suspect that a considerable number of the active cases were being given ambulatory treatment, which would tend to lessen the possibility of infecting others.

There is also a National Department of the Child. This department is organized somewhat like our Children's Bureau and carries on investigations, prepares information, and stimulates child welfare work generally. The annual budget is quite small, so it has not been able to develop to any considerable extent.

Throughout the country, each state maintains a health department with a full-time director of health. The State Health Department is responsible for all of the health activities in the state and supplies a limited number of personnel which are usually on a part-time basis. The necessary funds to carry out the health work and medical care for indigents in the various municipalities, which correspond to our counties, are also provided from the state health budget. The State Health Departments are also under the jurisdiction of the National Health Department. Here again the largest population centers receive the greatest benefits. The capitol cities all have health centers and the larger ones frequently have several. The health centers carry out the same type of programs as those in the United States and are gradually becoming a considerable force in many communities. What child welfare work is done is usually through these centers in the form of medical and preventive medical clinics. Probably the best general health work in Brazil is done through these centers.

There are two schools which offer one-year postgraduate courses in public health for physicians. These schools also conduct specialized courses in the various fields of public health such as child welfare, maternal welfare, tuberculosis, leprosy, epidemiology, statistics, and laboratory. A fair number of well-trained people are being prepared.

One of the greatest handicaps to reaching the masses on public health matters is the lack of public health nurses. With only about 175 public health nurses in the country, 135 of them are found in Rio de Janeiro, which is a city of 2 million people.

Very little health work has been done in the schools as we know it in the United States. In Rio and São Paulo where the health center programs are fairly well developed it has extended to the schools somewhat. Also in these cities the school lunch program is being developed. Recently a few private schools have employed nurses to supervise the health of the students. For all practical purposes the vast part of the country is without any school health program. The teaching of health subjects in the schools hardly exists.

There is one large private organization, the Legiao Brasileira de Assistencia which is supported by contributions and also partly by taxation, that engages

in welfare work, much of it directed toward children, orphanages, day nurseries in the larger cities, and an occasional children's hospital are operated by this group.

In all of Brazil there are approximately 1,300 hospitals containing 95,000 beds. This is about 2 beds for each 1,000 persons. Here again a great disparity is seen in that the larger cities may have 8 or 9 beds for each 1,000 people, while the smaller cities and rural areas have practically none. Most of these hospitals are operated either by the state or welfare societies in cooperation with the Catholic church. In the larger cities several fine, large hospitals have been completed in recent years. There are very few hospitals devoted exclusively to the care of children outside of Rio and São Paulo. Each of these large cities has two or more children's hospitals. I do not know how many hospital beds are available for pediatric cases.

Hospital care does not nearly approach our standards due chiefly to the lack of nursing care. In all of Brazil there have been only about 600 nurses graduated in the last 25 years. I believe there are now six recognized nursing schools in the country that can graduate less than 150 nurses each year. Most nursing care is given by attendants who are of the domestic servant level.

The resident and intern staff has never been developed in hospitals, so that patients are seen infrequently.

Most Brazilian physicians realize the shortcomings of their hospitals, but the present wage scale for nurses, which is under $50 a month, and the tendency of the public to regard nursing as a menial work, are largely responsible for the failure to develop an adequate nursing profession. At the present rate of progress it will be many years before hospital care develops to a point that is anywhere near adequate.

There is a Pediatric Society in Brazil with about 70 members. Many of these men are very fine pediatricians by anyone's standards. Most of the older men were trained in Europe, usually in Germany or France. In more recent years there have been several trained in the United States. It is my belief that most young Brazilian physicians would prefer to do postgraduate study in the United States and with any kind of encouragement they would look to us for medical leadership.

In attempting to present some of the chief health problems of Brazil Charts 1-11 may help to illustrate the general situation.

After collecting such information and after making studies of our own it became very evident that the chief causes of illness and death were diseases that were community problems.

The dysentery and typhoid group of diseases causing almost 350 deaths per 100,000 population, tuberculosis almost 300, and pneumonia and influenza about 200. Such diseases as malaria and syphilis cause a sizeable number of deaths, around 30 a year each per 100,000 of population. Though malaria may not cause as many deaths directly, it is a great incapacitator and chronic malaria is frequently a contributory cause of death, many people suffering from it, being easy victims for the respiratory infections and the diarrheas.

Chart 1.—Map of Brazil showing the distribution of population.

It will be noted that the greatest concentrations of people, 100 or over per square mile are located around Rio de Janeiro and São Paulo with the next most populous areas the States of Rio de Janeiro, São Paulo and the area around the tip of the bulge. It is estimated that 60 per cent of the population is within 100 miles of the coast.

Also a comparison of the size of the United States and Brazil can be shown. If the United States were superimposed on Brazil with Washington at Rio de Janeiro, the city of Natal on the tip of Brazil would be out in the middle of Hudson Bay. Belem on the mouth of the Amazon would fall near Helena, Montana, and Boa Vista on the Rio Branco would be at San Francisco. Benjamin Constant on the Peruvian Border would be about 700 miles off the coast of Lower California.

The greatest cause of infant deaths is also the dysentery group of diseases. Next are the acute respiratory infections and tuberculosis.

It is interesting to note that the infant death rate for the entire country was given as 185 per 1,000 live births in 1943. In Rio the rate was 150 and in São Paulo 115. In the cities along the northern coast the death rates for infants run from 235 to 450 per 1,000 live births. I have seen many areas where, from the best available information, the death rate for infants is around 500 per 1,000 live births. I really do not believe it is unusual in the vast interior of Brazil for people to lose at least one-half of their children.

It was very difficult to determine the prevalence of the various disease entities from what statistical information was available. It is only logical to

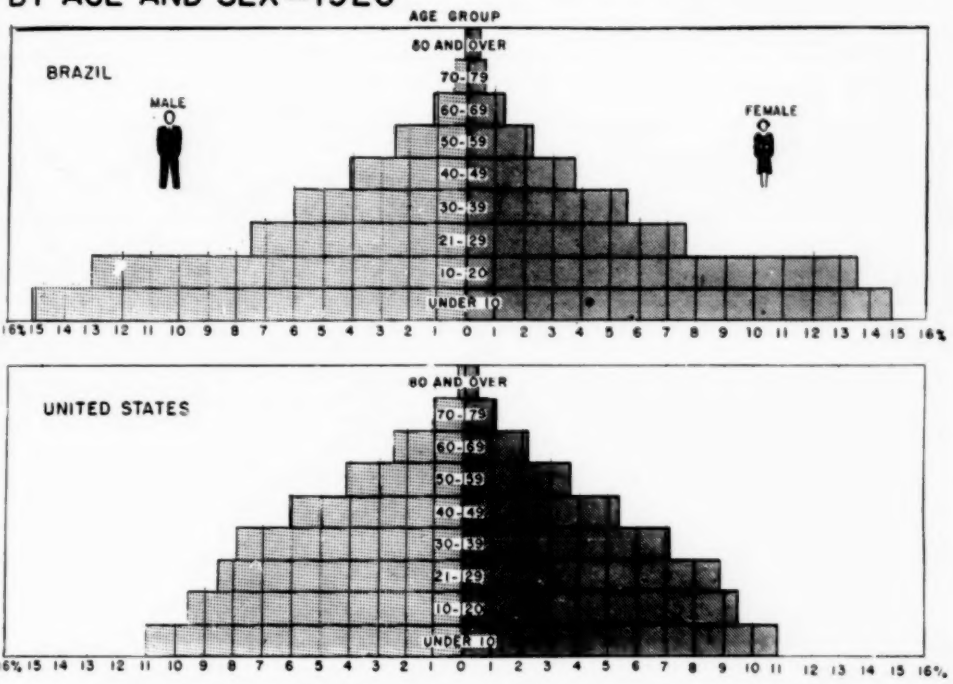

Chart 2.—Distribution of population by age and sex as compared with the United States.

It should be pointed out that it is difficult to interpret the existing statistics. In the well-developed areas where active health departments exist, the figures are fairly accurate, but in the larger part of the country statistics are incomplete and therefore do not always give a true picture of the conditions. It will be noted that the highest percentages in the young age groups make up a much greater percentage of the population in Brazil than in the United States. This percentage falls off abruptly at around 20 years. The terrifically high mortality rates in early life are a factor in this, plus probably an inaccurate census in the older age groups. As the collecting of statistics is relatively recent, the figures on the younger age groups are likely to be more accurate.

assume that where the death rate from intestinal diseases is 350 per 100,000 of population, that the morbidity figures would be very high, and of course actual experience bears this out. The same conclusion could be drawn from the figures on tuberculosis.

In the areas in which we worked, surveys were made to determine the incidence of certain prevalent diseases. Several places were found where infestations with intestinal parasites approached 100 per cent. Practically everyone had *Ascaris* and usually two or three varieties of lesser parasites such as whipworm or *Strongyloides*. I had never regarded these parasites as particularly harmful, but I had never seen really heavy infestations. I soon learned

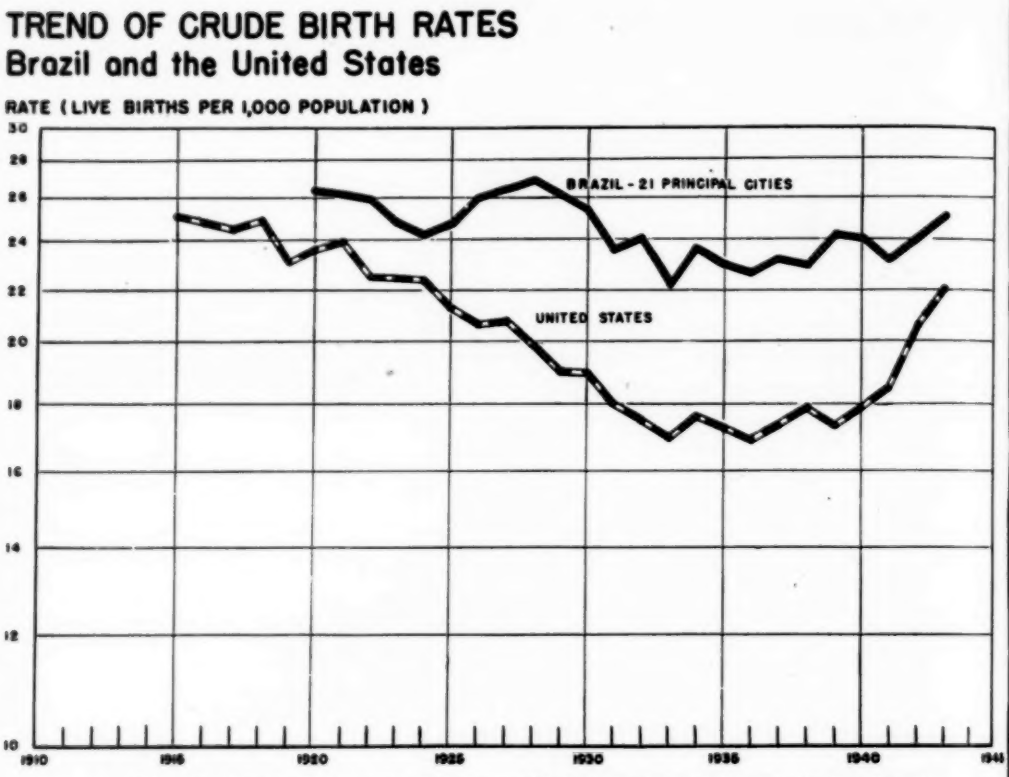

Chart 3.—Trend of the crude birth rates with a comparison of the rates in Brazil and the United States.

The Brazilian rate is consistently higher than that of the United States by 2 to 3 births per 1,000 of population and tends to be about stationary.

that several hundred *Ascaris* in one child, and especially when the diet was inadequate, could produce a profound malnutrition and anemia. These children were ready victims for any infection that might strike them. This is undoubtedly one of the factors in the high death rate from respiratory diseases.

Hookworm was particularly common, many surveys showing as high as 90 per cent positive stools. Hookworm is really a debilitating disease and particularly when the diet is poor. It is usually severe in children, but it also incapacitates many adults and prevents them from supporting themselves or their families.

Amebiasis is very common and is frequently seen in conjunction with the other parasites.

I should like very much to know the incidence of tuberculosis in Brazil. It is a very prevalent disease and causes 300 known deaths per 100,000 people each year. I strongly suspect that it causes many more than this. I have talked to

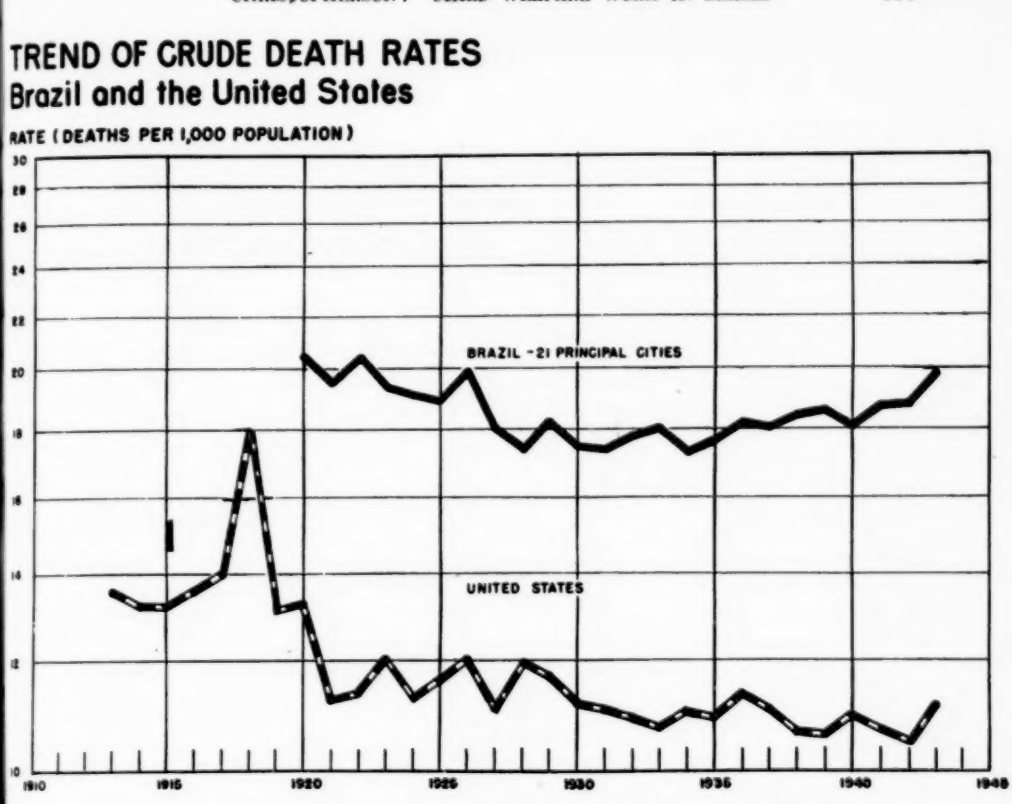

Chart 4.—Trend of the crude death rates—Brazil and the United States 1913-1943.

The Brazilian rate is at least twice that of the United States, averaging about 19 deaths per 1,000 as compared with an average of about 9 per 1,000 for the United States over this thirty-year period. The Brazilian rate has tended to go up in recent years and the United States rate is going down, being only about 7 in 1943. Part of the rise in the Brazilian rate may be due to better recording of deaths in recent years.

many men working on this problem and the lowest estimate was that 20 per cent of the population had tuberculosis. Others have given as high as 70 per cent as their guess. It is a very great problem and the country would be financially unable to attack this problem as we have done it in the United States. As I attempted to explain, while discussing the tuberculosis service, they are working hard within their means and seem to be making some progress.

Outside of the metropolitan areas, malaria is a dreaded disease. I have seen communities where 75 per cent of the people have had positive blood smears. For all practical purposes this means about 100 per cent infection. Such a community is barely able to exist. Few people can do much in the way of work and the death rate is very high, if not from malaria itself, from some intercurrent infection.

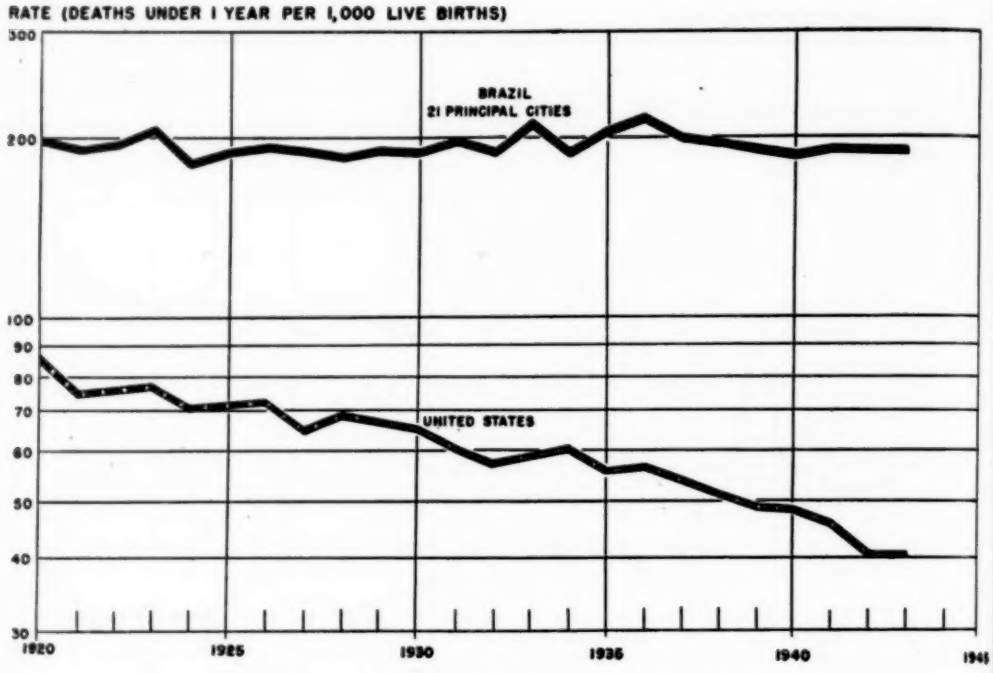

Chart 5.—Trend of infant mortality rates in Brazil and the United States.

The Brazilian rate has not changed over the twenty-three-year period covered, the rate being about 200 per 1,000 live births in 1920 and practically the same in 1943.

The very marked drop in the United States rate from 87 in 1920 to about 40 in 1943 is something we are very proud of and is a marked contrast to the Brazilian rate.

Generally in the interior, malnutrition is very prevalent and complicates the picture where other diseases are present. I never expected to see so many cases of nutritional edema and beri-beri. This situation is caused by lack of food primarily and also by poor eating habits due probably to many generations of an inadequate food supply. Rice and beans are the chief articles of diet and these are grown only in certain sections. Meat is scarce in great parts of the country and is very expensive when available. Milk can hardly be had except in the larger communities. Vegetables have never been grown in any quantity and most people have never learned to eat them. Even the fruits that are available are not used as extensively as they should be. Probably the worst dietary habit is the widespread use of farinha which is a meal prepared from the mandioca root. It is mostly cellulose, with little or no food value and is cheap. As it is filling, it has become one of the chief articles of the diet of the poorer people. These poor eating habits and the general lack of food cause a vicious

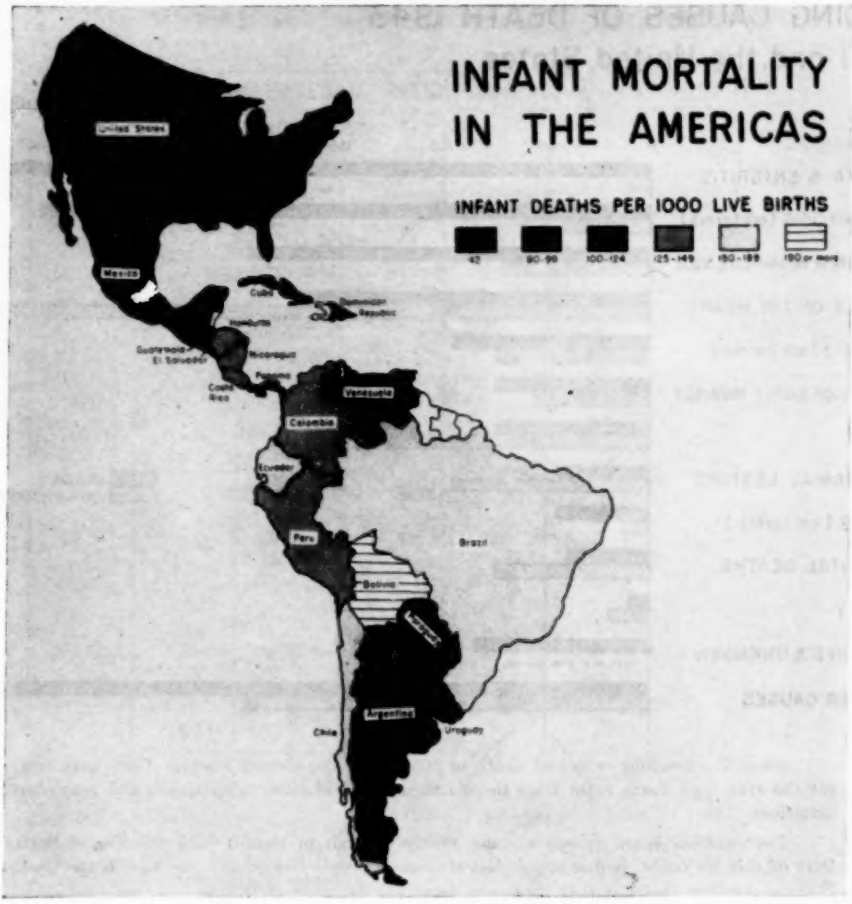

Chart 6.—Map of North and South America showing the infant mortality rates.

Though we are discussing only Brazil it is interesting to see the over-all picture in Latin America which does not differ on the whole from that in Brazil.

circle, with many people ill and thus unable to work resulting in an even greater food deficit. Transportation facilities are such that it is difficult to provide a good food supply from outside sources.

I know you are all beginning to wonder where the child welfare part of this talk comes in. I have been attempting to show that the great health problems in Brazil are very basic problems. They are concerned with lack of education generally and regarding health matters in particular. Such things as the lack of safe water supplies, proper excreta disposal facilities, poor food handling, lack of cleanliness generally, poor eating habits and lack of food are all very basic environmental problems. These problems are also community problems.

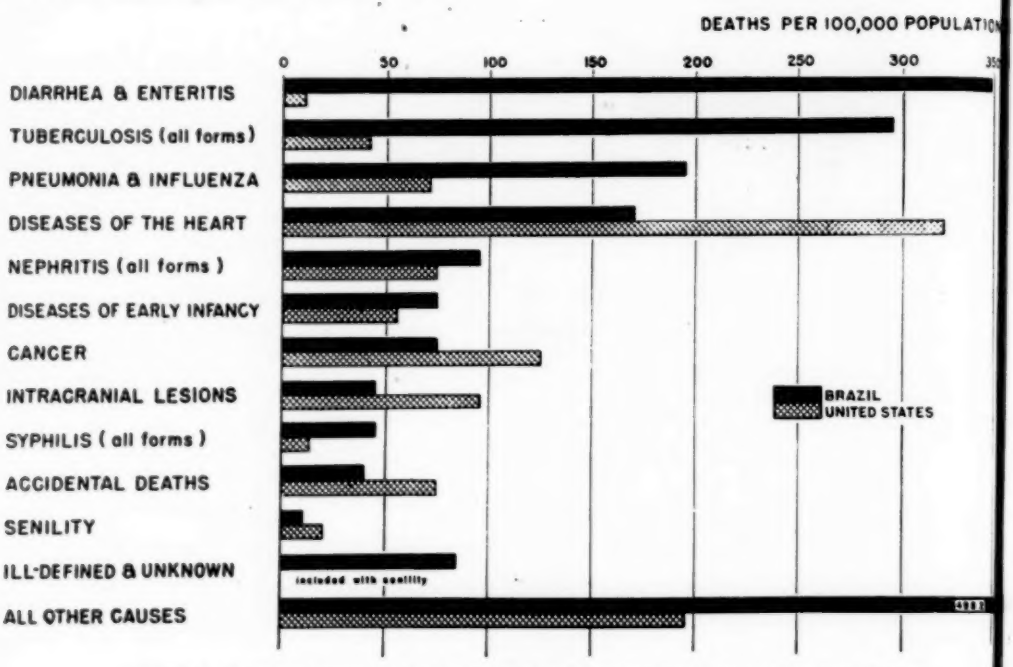

Chart 7.—Leading causes of death in Brazil and the United States. This chart brings out the very high death rates from the diarrheas and enteritis, tuberculosis, and respiratory infections.

Deaths from heart disease are not nearly as high in Brazil as in the United States. Part of this, no doubt, is due to the fact that more people live to an older age in the United States. Another factor is that rheumatic fever hardly exists in Brazil.

It is impossible to do much about safeguarding the child until the family and the community of families is protected and until the people are educated to the necessity for certain basic safeguards to their health. We in the United States take these basic health precautions as a matter of fact and have practically stopped talking about them. We are now putting on the frills and the lace, where in most Latin-American countries the very primary type of health work has to be done.

Even in the large and modern appearing cities of Rio and São Paulo, you will remember that the infant mortality rates are still 150 and 115, respectively, per 1,000 live births. Most of the childhood deaths throughout the country are caused by preventable diseases such as dysentery, tuberculosis, and syphilis. Many other deaths can be attributed to secondary diseases that are preventable. The only cure for such a situation is the education of the public and the

MORTALITY RATES IN RIO DE JANEIRO — 1930-1939

INFANT MORTALITY RATE

• • • • • • 180 Per 1000 Live Births

NEO-NATAL MORTALITY RATE

• • • • • • 50 Per 1000 Live Births

STILLBIRTHS

• • • • • • 90 Per 1000 Live Births

MATERNAL MORTALITY RATE

• • • • • • 9 Per 1000 Live Births

Chart 8.—Mortality rates in Rio de Janeiro.

CAUSES OF INFANT DEATHS IN RIO DE JANEIRO 1930-1939

	Under 1 Month	2-12 Months	Over 1 Year
Infectious Diseases	20%	19%	19%
Gastro-Intestinal	17%	50%	41%
Respiratory (including T. B.)	14%	21%	19%
Natal and Neo-Natal Causes	46%	3%	15%
ALL OTHERS	3%	7%	6%

Chart 9.—Causes of infant mortality in Rio de Janeiro, 1930-1939.

politicians. Unless people are informed of the dangers and how they can be prevented, and unless the politician and others in a position to lead the way realize the economic importance and the political value of health work, no great progress will be made.

Since our organization was charged with the responsibility of controlling disease conditions in strategic areas in the shortest time possible, of necessity we had to give our first attention to certain problems. In the Amazon and Rio Doce Valleys, the malaria problem was very great and was hindering the essential work to a considerable extent. This then received our first attention. With a handful of malaria experts and entomologists, mostly Brazilians, studies were started and field workers were trained to carry on the antimosquito work. A laboratory was established at Belem and ultimately studies were made of the entire Amazon and Rio Doce Valleys and the entire coastal region of Brazil.

DEATHS CAUSED BY INFECTIOUS DISEASES

	Under 1 Month	Under 1 Year
Congenital Syphilis	56%	31%
Tetanus	22%	7%
"Influenza"	13%	27%
Pertussis	3%	10%
Measles	1%	6%
OTHERS	5%	18%

Note that the dysenteries and the typhoid group of diseases are included under gastro-intestinal diseases.

Tuberculosis is included under respiratory diseases.

Chart 10.—Deaths caused by infectious diseases.

It must be remembered that on Chart 9, the dysenteries and the typhoid group of diseases are included under the gastrointestinal group, and that tuberculosis is included under the respiratory diseases.

In many instances control work of a permanent nature would have been far too costly, and in these places the disease was controlled fairly effectively by temporary measures. Whenever possible, plans were prepared for permanent work and presented to officials for use in longer term programs.

The health and medical care of 65,000 people who migrated into the Amazon Valley in 1943 was also placed in our hands. This included the examination and immunization of all at the different collecting stations. Of course poor risks were eliminated. While in transit and after being deposited in the Valley, keeping them in good health was our responsibility.

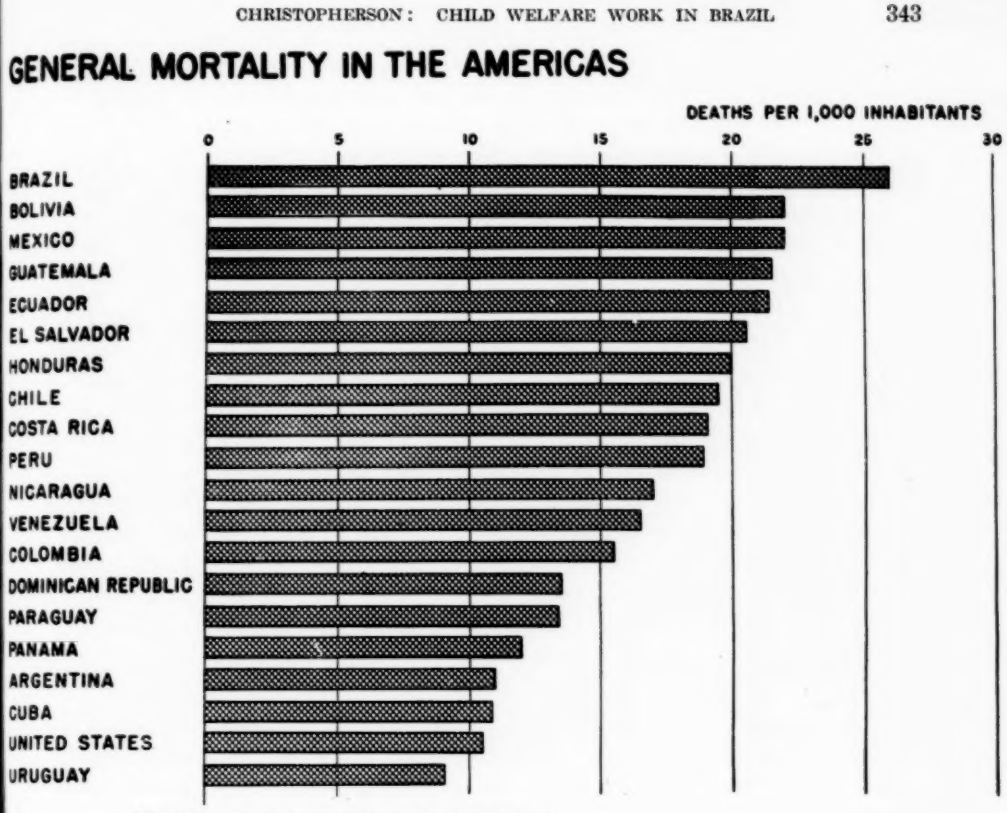

Chart 11.—General mortality in the Americas.

Aside from malaria, the great problems in the Amazon Valley and in the mining regions in Central Brazil, were dysentery, intestinal parasites, malnutrition, respiratory infections, and venereal diseases. We realized only too well that in order to control these diseases, longer term programs would have to be planned. We could help the hookworm situation for the time being by putting on treatment campaigns and likewise help to prevent dysentery to some extent by controlling and treating the water supplies and supervising food handling. However, these diseases are due to poor environmental sanitation and lack of education. Treating them alone was not sufficient. With the view in mind then of trying to effect permanent improvement and at the same time leave something in Brazil that could be carried on after our leaving, we prepared plans for a general basic public health program.

In order for such a program to be successful, certain trained personnel were essential. We were fortunate in acquiring a few Brazilian health workers who were well trained and most capable people. Four of them had graduated from public health schools in the United States. Training centers were established

in Belem for physicians and for field workers in malaria, and a health worker called a visitadora.

These visitadoras were to perform a job somewhat similar to that done by the public health nurse in the United States only in a limited way. They were to be home visitors and the missionaries to spread health education to the public.

Courses were given in several areas to schoolteachers to instruct them in the art of teaching health subjects to their pupils. Arrangements were also made with the school officials to have a certain period of time devoted to health education.

While this training program was going on, buildings were constructed or renovated to serve as small health centers in important communities. Projects were also being promoted with local officials to provide safe water and proper excreta disposal facilities in these same communities.

In our offices in Rio de Janeiro material was being prepared to carry on the health education program. As the people to be reached were mostly illiterate this material had to be very simple and chiefly visual in character. Charts, pictures, and posters were prepared for the use of the visitadora and the schools in their teaching. One of the most effective teaching aids was a film strip to be used as a series of slides. Along with this a recording was made to tell the proper story to go with the pictures. A great variety of subjects was covered in these film strips.

When I left Brazil in late August, thirty-five health centers were in operation. Each was staffed with from one to three physicians, several visitadoras and the necessary malaria field workers, sanitary inspectors and laboratory workers. These health centers served as a small health department and conducted campaigns against the prevalent diseases as well as a general health education program. Special clinics for children, expectant mothers, tuberculosis, venereal diseases and nutrition were developed. In areas where special problems existed, clinics were organized to handle these. In most of these places there were no other physicians, so that medical care also had to be given.

Safe water supplies and latrine projects were provided in these communities. In a few of the larger towns fairly extensive water and sewer systems were installed, usually on a cooperative basis with the municipality.

Providing and operating hospitals was avoided as much as possible. Hospitals are expensive to operate. Simply treating the diseases that were prevalent did not solve the problem. We felt that the money and work expended in preventive medicine would reach more people and have more permanent and far-reaching effects than if directed into medical care. We did operate six hospitals at key points to care for the more serious cases.

Many requests were made of us for assistance in developing nursing education in Brazil. We assisted in the organization and operation of four three-year nursing schools and gave consultation to several others.

Through the office of Inter-American Affairs we were able to give scholarships for study in the United States to 153 Brazilians. These scholarships were in public health, sanitary engineering, public health nursing, and the specialties

of tuberculosis, venereal disease control, child welfare, pediatrics, maternal welfare, and health education.

These people either have returned or will return to Brazil to work in the program we started or in one of the state health departments.

Will Brazil carry on this program? I think so. With the group of health workers developed and due to the fact that the program is simple and within the technical and financial means of Brazil to support, I have every reason to believe the work will continue and even be expanded. Brazil is even now putting over one million dollars a year into this special program.

I realize that in discussing these problems a rather unfavorable impression might be obtained of a wonderful country. Unfortunately the worst aspects have been presented of necessity in such a discussion, though I have attempted to tell of some of the really fine things that are being done.

I am very fond of Brazil and regard it as a great and beautiful country. The progress in almost every field that has been made in the last twenty years is astounding. There are many industrial centers developing and many new industries. Large steel mills, motor and machine factors, and textile mills are in operation. The building booms in Rio de Janeiro and São Paulo are greater than anything the United States has known, and they are showing the way in modern architecture. Great emphasis is being placed on education and schools, and cultural institutions are increasing rapidly.

In conclusion, the principal observations that were made regarding the child welfare problem in Brazil might be summarized as follows:

1. The chief causes of illness and death in adults as well as in children in Brazil are preventable diseases.

2. These diseases are due primarily to poor environmental sanitation and the lack of public knowledge regarding basic health facts.

3. The health problems are community problems and must be attacked by the health education of the leaders and the masses.

4. No child health program can be effective until a general health program is well developed.

5. Last, to show how in our special Health Organization we attempted to meet the problems by developing a simple and basic health program.

American Academy of Pediatrics

Proceedings

FOURTEENTH ANNUAL MEETING OF THE AMERICAN ACADEMY OF PEDIATRICS

DETROIT, MICH., JAN. 15, 16, 17, AND 18, 1946

POST-WAR CONFERENCE ON CHILD HEALTH

Program

Tuesday

10:00 A.M. Clinics: Children's Hospital of Michigan, Herman Kiefer Hospital, Henry Ford Hospital

7:00 P.M. Child Health Activities in Brazil. Einor H. Christopherson, M.D., Assistant Director, Division of Health and Sanitation, The Institute of Inter-American Affairs

Wednesday

9:00 A.M. The Diagnosis and Treatment of Recurrent Attacks of Rheumatic Fever. Arild E. Hansen, M.D., Professor of Pediatrics, School of Medicine, University of Texas

Histoplasmosis. John H. McLeod, M.D., Washington, D. C.

Discussion. Chester W. Emmons, Ph.D., Principal Mycologist, United States Public Health Service

Facts and Figures in Pediatric Medicine. Marguerite F. Hall, M.A., Ph.D., Associate Professor of Public Health Statistics, School of Public Health, University of Michigan

12:00 N. Luncheons

The Committee on Rheumatic Fever. Alexander T. Martin, M.D., Chairman

The Committee on Cooperation With Nonmedical Groups. Albert D. Kaiser, M.D., Chairman

The Committee on School Health. Harold H. Mitchell, M.D., Chairman

The Committee on Fetus and Newborn. Ethel C. Dunham, M.D., Chairman

The Committee on Mental Health. Bert I. Beverly, M.D., Chairman

2:00 P.M. Streptomycin: Clinical and Experimental Observations. H. C. Hinshaw, M.D., Ph.D., Associate Professor of Medicine, Mayo Foundation

Influenza. Thomas Francis, Jr., M.D., Professor of Epidemiology and Chairman of the Department of Epidemiology, School of Public Health, University of Michigan; Director, Commission on Influenza, Army Epidemiological Board

Report of Committee on Post-War Courses in Pediatrics. Irvine McQuarrie, M.D., Chairman

5:30 P.M. State Chairmen's Meeting

7:00 P.M. Poliomyelitis—Modern Treatment and Neuro-Pathology. Hart E. Van Riper, M.D., Assistant Medical Director, National Foundation for Infantile Paralysis, Chairman

The Psychological and Psychiatric Implication of Poliomyelitis. Bronson Crothers, M.D., Clinical Professor in Pediatrics, Harvard Medical School

The Pediatrician's Responsibility in Diagnosis and Early Care of Poliomyelitis. Philip M. Stimson, M.D., Associate Professor in Pediatrics, Cornell University Medical College; Director of the Knickerbocker Hospital, Poliomyelitis Demonstration Unit, New York City

Neuro-Pathology of Poliomyelitis. Howard A. Howe, M.D., Poliomyelitis Research Center, The Johns Hopkins University

Orthopedic Care of Poliomyelitis. R. Plato Schwartz, M.D., Associate Professor of Surgery, University of Rochester, School of Medicine

The Place of Physical Medicine in Poliomyelitis. Robert L. Bennett, M.D., Director of Physical Medicine, Georgia Warm Springs Foundation, Warm Springs, Ga.

Thursday

8:00 A.M. Report of Committee on Post-War Planning. Warren R. Sisson, M.D., Chairman

Report on Pending and Proposed Child Health Legislation. Joseph S. Wall, M.D., President

The Movement in Medical Economics. Nathan Sinai, M.D., D.P.H., Professor of Public Health, Director of Bureau of Public Health Economics, The School of Public Health, University of Michigan

2:00 P.M. Infectious Hepatitis: Etiology and Epidemiology. Joseph Stokes, Jr., M.D., Professor of Pediatrics, University of Pennsylvania

Acute and Chronic Infectious Hepatitis Without Jaundice. Richard B. Capps, Major, M.C., Chicago, Ill.

Cerebral Anoxia in Pediatrics. Frederic Schreiber, M.D., Professor of Neurological Surgery, College of Medicine, Wayne University

7:30 P.M. Banquet

Friday

9:00 A.M. The Borden Award
Business Meeting. Joseph S. Wall, M.D., Presiding
Election of Officers
Installation of New President

Meeting of Executive Board
Jan. 13 and 14, 1946

A meeting of the Executive Board of the American Academy of Pediatrics was held in the Book-Cadillac Hotel, Detroit, Mich., on Sunday and Monday, Jan. 13 and 14, 1946.

The first session was called to order by the President, Dr. Joseph S. Wall, on Sunday at 2:10 P.M. There were present Drs. Wall, Durand, Munns, Quillian, Stringfield, Lee Forrest Hill, Lewis Webb Hill, Pease, Bruce, Spickard, Hurtado, Martmer, and Grulee.

The first order of business was the consideration of applicants. The following applications were submitted by the Regional Committee of Region I:

Eleanor L. Adler, Yonkers, N. Y.
Olga E. Allers, Brookline, Mass.
Samuel R. Berenberg, New York, N. Y.

James Thomas Cameron, Quincy, Mass.
Solkin C. Copeland, Philadelphia, Pa.
Max D. Garber, Rochester, N. Y.
Henry M. Glaubman, Hartford, Conn.
Ernest F. Gordon, Yonkers, N. Y.
Milton M. Greenberg, Washington, D. C.
Dorothy S. Jaeger-Lee, Washington, D. C.
Herbert B. Johnson, Kingston, N. Y.
Edmund N. Joyner, New York, N. Y.
Herman B. Katzman, Brooklyn, N. Y.
William J. Kelley, Roslindale, Mass.
Anna P. Klemmer, Lancaster, Pa.
Lawrence Kuskin, Brooklyn, N. Y.
Max Landsberger, Buffalo, N. Y.
Jacob D. Leebron, Philadelphia, Pa.
Virginia C. Lent, Hempstead, N. Y.
Dario Morelli, Wakefield, Mass.
Lyon M. Pearlman, Ottawa, Ont., Canada
Louis M. Platt, Rochester, N. Y.
Ralph Lewis Prowda, Syracuse, N. Y.
Henry Rabnowitz, Brockton, Mass.
Charles Kingsley Rowan-Legg, Ottawa, Ont., Canada
William L. Rumsey, Jr., Elizabeth, N. J.
Edward R. Schlesinger, Syracuse, N. Y.
Samuel Silber, Brooklyn, N. Y.
Anthony G. Stigliano, Brooklyn, N. Y.
Edward Michael de Tona, New York, N. Y.
Dorothy V. Whipple, Washington, D. C.

Dr. Stringfield moved that these applicants be elected to membership. The motion was seconded and carried.

The applications of Dr. Edward Michael De Tona of New York City and Dr. Jacob D. Lebron of Philadelphia were considered. It was moved by Dr. Stringfield, seconded, and carried that they be elected to membership.

The following applications were submitted by Region II:

Charles E. Anderson, Jr., Shreveport, La.
Jay M. Arena, Duke Hospital, Durham, N. C.
John M. Lee, Nashville, Tenn.
Thistle M. McKee, Alexandria, Va.
Martin G. Neely, Birmingham, Ala.
Benjamin Owen Ravenel, Charleston, S. C.
George W. Salmon, Houston, Texas
John Hostley Soady, Asheboro, N. C.
Jack Tepper, Chattanooga, Tenn.

It was moved by Dr. Bruce, seconded, and carried that these applicants be accepted.

The following applications were submitted from Region III:

Mary Daniel Ames, Detroit, Mich.
George E. Anthony, Flint, Mich.
Philip L. Aries, Chicago, Ill.
Katherine Howard Baird, Wauwatosa, Wis.
Rowine Hayes Brown, Chicago, Ill.
Robert Peers Buckley, Duluth, Minn.
Frank Stephen Cross, Lansing, Mich.
Eugene Gettelman, Chicago, Ill.

Sidney A. Kauffman, Indianapolis, Ind.
Willard Z. Kerman, Chicago, Ill.
Ernest Robbins Kimball, Jr., Evanston, Ill.
Herbert C. Miller, Kansas City, Kan.
Howard R. Miller, Peoria, Ill.
Wesley Stephan Nock, Chicago, Ill.
Glenn B. Patrick, Elkhart, Ind.
Iwan Rosenstern, Evanston, Ill.
Ashley Weech, Cincinnati, Ohio

It was moved by Dr. Lee Forrest Hill, seconded, and carried that these applicants be accepted.

The following applications were submitted from Region IV:

Ellis W. Adams, Great Falls, Mont.
William Thomas Auld, Stockton, Calif.
Donald J. Bourg, Portland, Ore.
Mollie Chalfin, Oakland, Calif.
Carl A. Erickson, Pasadena, Calif.
John Richard Jimerson, Long Beach, Calif.
Harry R. Lusignan, Monterey, Calif.
Roderick A. Norton, Tacoma, Wash.
Gordon L. Richardson, Hollywood, Calif.
Harold Weatherman, San Diego, Calif.

It was moved by Dr. Spickard, seconded, and carried that these applicants be accepted.

The following applications were submitted by Region V:

Waldyr de Abreu, Rio de Janeiro, Brazil
Humberto Arroyo Parejo, Caracas, Venezuela
Alvaro Serra de Castro, Rio de Janeiro, Brazil

Dr. Hurtado moved that these applicants be accepted. The motion was seconded and carried.

The following were elected to Emeritus Fellowship:

William N. Bradley, Philadelphia, Pa.
Guy I. Bliss, Long Beach, Calif.
Howard C. Carpenter, Philadelphia, Pa.
James Dunn, Davenport, Iowa

The following resignations were accepted:

Herbert Archibald, Oakland, Calif.
Charles N. Sturtevant, Philadelphia, Pa.
Henry P. Wright, Montreal, Que., Canada

Dr. Franklin Henry Top, Detroit, Mich., was elected to Associate Membership.

Dr. Grulee reported that the name of Dr. Donald Patterson of London, England, had been suggested for Honorary Fellowship. It was moved, seconded, and carried that Dr. Patterson be elected to Honorary Fellowship.

The names of three men in arrears for dues were presented and the Secretary was instructed to notify them that unless dues were paid to date they would be dropped from membership.

The report of the President was presented by Dr. Wall.

The report of the Secretary was presented by Dr. Grulee. It was moved, seconded, and carried that the report be accepted.

The report of the Treasurer was presented by Dr. Grulee. The salaries of the office assistants were discussed by Dr. Grulee. It was moved, seconded, and carried that Mrs. Bundy's salary be raised to $250 a month and that of Mrs. Fuger to $150 a month (she is paid an additional $25 for assistance to Dr. Grulee in editorial work).

In the absence of Dr. Grulee and Dr. Martmer, their salaries were discussed by Dr. Wall. It was moved, seconded, and carried that Dr. Grulee's salary be increased to $12,000 a year and Dr. Martmer's to $2,000 a year. All salary increases to take place as of January 1.

The next order of business was the report of the Regions.

The report of Region I was accepted as published. It was moved, seconded, and carried that the name of Dr. Paul W. Beaver of Richester, N. Y., be recommended to the President for appointment as Associate Regional Chairman of Region I.

The report of Region II was accepted as published.

The report of Region III was accepted as published. It was moved, seconded, and carried that the name of Dr. Roger Kennedy of Rochester, Minn., be recommended to the President as Associate Chairman for Region III.

The report of Region IV was accepted as published.

The report of Region V was discussed by Dr. Hurtado. It was moved by Dr. Hurtado, seconded, and carried that the President appoint a committee consisting of members of the Executive Committee and of the Latin-American group to consider the subject of a Pan-American Congress in 1948, the committee to report at the annual meeting in 1946.

The question of dues for Region V was discussed by Dr. Hurtado. It was moved by Dr. Hurtado, seconded, and carried that as the result of his knowledge of the situation the dues for members in Cuba, Brazil, Colombia, and the Dominican Republic be made the same as the dues of members in the United States, namely, $20 a year, and that the dues for members in the remaining countries be made $10 a year except for new members elected after July 1, 1946, who would pay $20 a year.

The meeting recessed for dinner at 5:40 P.M. and reconvened at 8:00 P.M.

The first order of business was the reports of Standing Committees with State Activities.

The Secretary read a letter from Dr. Fairfax Hall concerning the work of the Committee on Contact Infections and in which he tendered his resignation as Chairman of the Committee. It was moved, seconded, and carried that the resignation of Dr. Hall be accepted and that the incoming President appoint his successor as Chairman and another member of the Committee.

The report of the Committee on Cooperation with Nonmedical Groups was accepted as published.

The report of the Committee on Governmental and Medical Agencies was accepted as published.

The next order of business was the report of Standing Committees.

The report of the Committee on Fetus and Newborn contained questions by Dr. D. Lesesne Smith concerning the use of penicillin in place of silver nitrate for eye prophylaxis, and by Dr. Jerome Glaser concerning the definition of the newborn period. It was moved, seconded, and carried that the Secretary write the Chairman of the Committee instructing the Committee to continue its investigations concerning the use of penicillin in place of silver nitrate and report at a future meeting.

Concerning the letter of Dr. Glaser, it was moved, seconded, and carried that the Executive Board concur in the recommendation of the Committee.

Dr. Wall presented the report of the Committee on Legislation.

Dr. Grulee reported for the Committee on Pan-American Scholarships.

Dr. Grulee reported for the Committee on Pediatric Awards.

Dr. Martmer reported for the Program Committee.

The next order of business was the reports of Special Committees.

Dr. Martmer reported regarding redistricting the Academy. It was moved by Dr. Stringfield, seconded, and carried that the report of the Committee on redistricting the Academy be accepted, that the report be mimeographed and copies presented to the members at this meeting; that the question be voted on at the next annual meeting of the Academy

along with such changes in the by-laws as would make them consistent with the new districting of the Academy.

Dr. Martmer reported concerning life membership in the Academy. It was moved by Dr. Munns, seconded, and carried that the report be held over for consideration for one year. It was moved by Dr. Stringfield, seconded, and carried that the Committee be thanked by the Executive Board for their report.

The meeting adjourned at 9:55 P.M.

The Monday morning session was called to order by the President at 10 A.M. In addition to the members of the Executive Board there were present by invitation Drs. Hugh McCulloch, Warren Sisson, and John Hubbard.

The first order of business was the report of the Committee on Cooperation with the American Legion by Dr. McCulloch. It was moved, seconded, and carried that the report be accepted.

The next order of business was the report of the Committee on Rheumatic Fever by Dr. McCulloch. It was moved, seconded, and carried that the recommendations of Dr. McCulloch that the Executive Board approve the Council on Rheumatic Fever as established under the articles he presented and appropriate the sum of $100 for membership in the Council.

Under unfinished business, the Secretary stated that Dr. Hurtado had proposed the name of a Havana pediatrician for Honorary Membership. It was moved, seconded, and carried that the former action of the Board be applied in this case, namely, that no honorary members are elected from the United States, Canada, or Latin America.

The report of the Committee on Geographical Distribution of Pediatricians was received. It was moved, seconded, and carried that the report be accepted and the Secretary was instructed to write a letter of commendation to Dr. Goehle.

The Secretary read a letter from Dr. Carl H. Smith requesting that the Committee on National Defense be continued, and it was so ordered.

Dr. Grulee reported for the Committee on Post-War Courses in Pediatrics.

The report of the Committee on Post-War Planning was presented by Dr. Warren Sisson who, in turn, introduced the Executive Secretary, Dr. John Hubbard. Dr. Hubbard outlined the proposed plan.

It was moved, seconded, and carried that the Executive Board confirm the appointment of Dr. Hubbard at a salary of $10,000 a year.

The question of obtaining funds for the work of the Committee was discussed. It was moved, seconded, and carried that this matter be tabled until a subsequent meeting of the Board to give Dr. Grulee opportunity to make some investigation.

The report of the Committee on Tumor Registry was accepted.

The Nominating Committee presented the following report:

President-Elect:	Dr. Lee Forrest Hill
Chairman of Region III:	Dr. George F. Munns

The meeting recessed for luncheon at 1 P.M. and reconvened at 2 P.M.

Dr. Martha Eliot was present by invitation.

The first order of business was the report of the American Board of Pediatrics by Dr. Lee Forrest Hill. It was moved, seconded, and carried that the report be accepted.

Dr. Martha Eliot discussed the relations of the Academy with the Children's Bureau and answered questions put to her by the members of the Board.

The Committee then took up miscellaneous business. The Secretary read a letter from Mr. Stein regarding framing of certificates.

The Secretary read a letter from the American Public Relations Association concerning annual Public Relations Awards.

The Secretary read a letter concerning the National Planning Association. Dr. Stringfield said he had been directed by the President to attend a meeting of this organization in New York. It was moved, seconded, and carried that Dr. Stringfield be continued as an observer of this organization.

The Secretary read a letter from Dr. Henry G. Poncher regarding scientific exhibits. It was moved, seconded, and carried that the Secretary handle this matter and report at the June meeting of the Executive Board.

Dr. Wall said he had received a letter from Dr. Harold Mitchell concerning the National Council of Scientific, Professional, Art, and White Collar Organizations. It was agreed that Dr. Mitchell should continue as an observer of this organization.

The Secretary read a letter from Mr. A. L. Rose pertaining to the translation of the Child Health Record into Spanish. The request was granted.

The Secretary read a letter from Dr. John A. V. Davies in referring to special events connected with the meeting of the Academy and his disapproval of same.

The Secretary read a letter from Dr. Harvey F. Garrison concerning hotel reservations. It was moved, seconded, and carried that the Secretary be authorized to reply to Dr. Garrison that he is not responsible for the reservations of State Chairmen.

The Secretary read a letter from Dr. Leona Baumgartner regarding French pediatricians.

The proposed changes in the By-Laws supported by the Executive Board at its meeting June 15, 1945, had been sent to the membership by mail and the vote was 172 for acceptance and 1 against. It was moved, seconded, and carried that the vote of the membership be approved for the following changes:

Article III, Section 2, page 11, the words *with the exception of Region V* be deleted.

Article III, Section 4, page 11, following the word "President," *annually* be inserted followed by a *comma*.

In the same section, page 12, top line, a *comma* be inserted after "Regional Chairmen."

The Secretary read a letter from Dr. Coe asking that a section on Surgical Diseases of Children be included in the Academy program. It was moved, seconded, and carried that the Secretary write Dr. Coe and tell him that at the next meeting a round table on the subject will be provided.

The Secretary requested that he be empowered by the Executive Committee to resign from the Advisory Committee of the Children's Bureau. It was suggested that the matter be held over until the next meeting.

The question of publicity was discussed by the Secretary. He was instructed to discuss with Mr. Selz the cost of a permanent publicity man.

The question of holding an International Congress on Pediatrics was presented by Dr. Helmholz. It was moved by Dr. Spickard, seconded, and carried that it be the consensus of opinion that in view of the proposed Pan-American Congress in 1948, that the question of holding an International Congress be deferred until after the meeting of the Pan-American Congress.

The question of the place and time of the next annual meeting was discussed. It was moved, seconded, and carried that the time and place be left to the President and Secretary, with the preference for the Southwest, particularly Dallas.

The President said that last year the Board authorized the expenditure of $25 for membership in the Child Welfare Information Service. It was moved, seconded, and carried that $25 be again subscribed.

The meeting adjourned at 6 P.M. to meet on Tuesday at 5 P.M. and again on Thursday, at 12 o'clock noon.

Report of Committee on Redistricting Membership

Report of the committee appointed by the president on the recommendation of the Executive Board of the American Academy of Pediatrics to consider the redistricting of the membership on the basis of number of members so as to provide for more equitable representation on the Executive Board.

The committee submits the following plan:

HISTORICAL

At the time the Academy was organized it was necessary to provide some form of equitable distribution of the representation on the Executive Board. With this in mind the four regions with which we are all familiar were set up. A natural division was into the Eastern, Southern, Middle Western, and Far Western States.

With the passage of time it has become evident that such a division has ceased to be a satisfactory method of providing representation on the Executive Board. With the large increase in membership of the Academy it has been suggested that the problem of redistricting be studied so as to provide equitable representation on the basis of number of members.

This committee proposes that the United States, Canada, Hawaii, and Puerto Rico be divided into eight (8) districts of approximately equal numbers of members. District 9 would comprise the Latin-American countries now constituting Region V.

Each district would be represented on the Executive Board by a district chairman who would represent the members of his district as well as serve in the same capacity as the present Regional Chairman.

District Chairmen would be elected by the membership in the same manner as is now provided for the election of Regional Chairmen and would serve for a period of eight (8) years. In this way there would be one new member of the Executive Board elected each year so as to provide stability to the Executive Board and at the same time assure a constantly changing membership.

Under such a plan the present regional activities which consist almost entirely of the arranging of Clinical Meetings in the spring of each year would be discontinued and in place of such Regional Meetings it is proposed that a spring meeting or meetings would be provided through the effort of the Academy and the Secretary's Office. Such meeting or meetings would be held at strategic cities throughout the United States so as to afford those members who were not able to attend the Annual Meeting in the fall an opportunity to attend a Clinical Meeting at which subjects could be presented which should be brought to the attention of the membership.

In this connection the meeting of the Executive Board in the spring could coincide with one of these meetings and enable the membership and the Executive Board to discuss matters of mutual interest.

Under such an arrangement the regional groups would be relieved of the responsibility for arranging such meetings as well as the financial responsibility which has proved a burden in some instances.

Such a meeting or meetings could be expected to pay their own way through the sale of exhibit space because of the greater attendance which would be assured through making them open to all members of the Academy as well as to others interested in pediatrics if the Executive Board should feel this would be a proper course.

Should the Executive Board feel that one meeting a year is sufficient it would still be possible under such an arrangement as has been suggested for the State Chairmen of the various districts to get together at such times as might seem advisable.

RECOMMENDATIONS

1. That the Executive Board submit to the membership the proposal that the Academy redistrict Regions I, II, III, and IV into eight (8) districts based upon an equal number of members in each district.

2. That the districts be represented by a district or Regional Chairman with all the duties and responsibility now held by a Regional Chairman.

3. That nominations and election of such Regional Chairmen be done in the manner now prescribed in the Constitution.

4. That the term of office of a District Chairman be for a period of eight (8) years.

5. That the Executive Board be empowered to make all necessary changes in the Bylaws of the American Academy of Pediatrics to accomplish the Redistricting as proposed in this report.

District 1	
Maine	6
New Hampshire	5
Vermont	6
Massachusetts	78
Connecticut	60
Rhode Island	14
Quebec	19
Total	188
District 2	
New York	210
District 3	
Pennsylvania	118
New Jersey	74
Delaware	6
Total	198
District 4	
Maryland	27
Washington, D. C.	33
W. Virginia	9
Virginia	31
N. Carolina	24
S. Carolina	11
Georgia	33
Florida	27
Puerto Rico	3
Total	198
District 5	
Michigan	80
Indiana	20
Ohio	92
Kentucky	16
Ontario	18
Total	226
District 6	
North Dakota	3
South Dakota	2
Nebraska	13
Minnesota	33
Iowa	15
Wisconsin	19
Illinois	134
Saskatchewan	1
Manitoba	1
Total	221
District 7	
Kansas	8
Missouri	42
Oklahoma	14
Arkansas	4
Texas	78
Louisiana	27
Tennessee	31
Mississippi	11
Alabama	21
Total	236
District 8	
Montana	4
Idaho	3
Wyoming	1
Utah	8
Nevada	2
Colorado	17
Arizona	7
New Mexico	4
British Columbia	3
Washington	20
Oregon	9
California	131
Hawaii	3
Total	212
District 9	
The Latin-American Countries	158

District 1	188
District 2	210
District 3	198
District 4	198
District 5	226
District 6	221
District 7	236
District 8	212
District 9	158

Report of Committee on Post-War Planning

Thursday, January 17

PROGRESS AND PLANS OF THE STUDY OF CHILD HEALTH SERVICES

DR. WARREN R. SISSON, CHAIRMAN OF COMMITTEE, AND
DR. JOHN P. HUBBARD, DIRECTOR OF STUDY

AT THE meeting of the American Academy of Pediatrics in Detroit, Jan. 14-18, 1946, there was much discussion of the progress and plans of the Study of Child Health Services in meetings of the Executive Board and State Chairmen, as well as more detailed consideration by the Committee for the Study of Child Health Services. Furthermore, a panel

discussion was presented to a general meeting of the Academy on the morning of Jan. 17, 1946. Rather than reporting the minutes of these meetings in full, they are summarized here.

MEETINGS WITH THE EXECUTIVE BOARD

In meetings held with the Executive Board, Drs. Sisson and Hubbard reviewed the development of the Study since its adoption by the Academy at the annual meeting in St. Louis in November, 1944.

Careful consideration was given to the proposed budget. It was realized soon after the Study was first undertaken that the original $8,000 was going to turn out to be a relatively small item to prime the pump. The budget which has now been drawn up to show the total cost of the Study for a period of two years from the present date, includes:

1. $29,000 apportioned to the Academy to cover salaries of the Director, Assistants, and their travel
2. $69,400 apportioned to the United States Public Health Service, representing the salaries of personnel assigned to the Study and the value of coding and statistical equipment supplied by the Public Health Service
3. $25,900 apportioned to the Children's Bureau representing the salaries of personnel assigned to the Study by the Children's Bureau
4. $111,800 which it is anticipated should be made up by the States in order to finance in part the cost of the Study within their own boundaries
5. $203,800 from other sources for the costs not covered above of salaries and travel of additional personnel, office expenses, printing, etc.

The total budget made up on this basis is $439,900. As reported elsewhere in the minutes of the Executive Board, action was taken to approve this budget and to appoint a Ways and Means Committee to attempt to raise the amount of approximately $200,000 apportioned to "other sources." Furthermore, it was voted to withdraw from the reserve fund of the Academy an additional $10,000 for the expenses of the Study.

Attention is also directed to the fact that the Executive Board voted to change the name of the committee of nine, of which Dr. Sisson is Chairman, from the Committee on Post-War Planning to the Committee for the Study of Child Health Services.

SUMMARY OF DISCUSSION AT GENERAL MEETING AND AT MEETING WITH STATE CHAIRMEN

Panel Discussion Presented to General Meeting.—A panel discussion was presented to a general meeting of the Academy on the morning of Jan. 17, 1946, as follows:

1. General Scope and Purpose, Dr. Warren R. Sisson, Chairman
2. Administrative Organization, Dr. Charles L. Williams, Jr., Executive Secretary from the United States Public Health Service
3. Questionnaire Schedules, Dr. Katherine Bain, Executive Secretary from the Children's Bureau
4. Review of the Pilot Study in North Carolina, Dr. Arthur H. London, Jr., State Chairman from North Carolina
5. Further Conduct of the Study, Dr. John P. Hubbard, Director of Study
6. What Do We Hope to Get Out of It? Dr. Henry F. Helmholz

In discussing the scope and purpose of the Study, Dr. Sisson emphasized the importance of keeping in mind the original objective and quoted from the resolution adopted by the Academy in St. Louis in 1944: "To make available to all mothers and children in the U. S. A. all essential preventive, diagnostic, and curative medical services of high quality, which used in cooperation with the other services for children, will make this country

an ideal place for children to grow into responsible citizens.'' And as a first step toward this end, the recommendation ''that the American Academy of Pediatrics request the United States Public Health Service and the Children's Bureau to undertake with the Academy a survey in every state to determine . . . information concerning the present situation and extension of personnel and facilities needed in each state to meet the objectives as stated. . . .''

The content of the Study falls into four major fields of inquiry: pediatric education; distribution, qualification, and activities of professional personnel; hospital and clinic facilities; and general health services.

1. *Pediatric Education.*—Basic to any study concerned with health of children is a study of education of physicians in pediatrics, both general practitioners and specialists. It is proposed to make a study of the sixty-six medical schools in the country to determine the quantity and quality of training in pediatrics: undergraduate, intern and resident, postgraduate for general practitioners, pediatric nursing, and others. Data will be obtained on staff, curricula, number of pediatric beds available for teaching, and opportunity for study of pediatric specialities such as allergy, rheumatic fever, and mental hygiene.

This part of the study will be carried out on a national basis, rather than State by State, and will be the responsibility of a special committee composed of pediatricians well qualified in the field of medical education.

2. *Distribution, Qualifications, and Activities of Professional Personnel.*—It has long been recognized that most of the pediatricians are in cities, but that even there much of the care of children is given by general practitioners. In this part of the study, data will be collected on distribution of pediatricians (diplomates and nondiplomates), general practitioners and specialists competent to handle certain specialized care of children, as surgeons, allergists, cardiologists, and psychiatrists. Information will be sought in each community concerning availability of physicians and facilities for procedures essential for emergency diagnosis and therapy of sick infants such as: transfusing newborn infants including Rh typing, provision of intravenous fluids, provision of artificial respiration and oxygen, facilities for tracheotomy, and essential bacteriological and chemical determinations. An attempt will be made through special questionnaires to estimate the amount of time devoted by general practitioners to the care of children, and the extent to which they have had postgraduate training in pediatrics. It is hoped also to gather data from pediatricians relating to size of case load, through recording of cases seen in a definite period, as for one week or one month, in the home, office, hospital, or in consultation.

3. *Hospital Facilities, Including Outpatient Clinics, and Laboratories.*—Fortunately, a comprehensive study of hospitals by the Commission on Hospital Care is already under way. Much of the material being gathered in the hospital survey is identical with that desired by the Academy survey, though much more detailed material on pediatric and newborn care is needed. Arrangements are being made to use material from the hospital survey and to supplement this with data obtained on a supplementary schedule. Data on outpatient clinics and on laboratories are to be included.

4. *Health Services for Children.*—The survey will cover the extent and quality of such services as child health conferences, school health services, medical care programs, immunization services, child guidance services, and public health nursing. Some of the information can be supplied by State health agencies. Other parts will have to be gathered directly.

The administration of the Study has been organized under the guidance of the Committee made up of nine, all of whom are members of the Academy. An additional Advisory Committee consists of Dr. Joseph S. Wall, Dr. Martha M. Eliot, and Mr. George St. J. Perrott. The central executive and administrative committe is as follows: Dr. John P. Hubbard, Director, Drs. Katherine Bain and Charles L. Williams, Jr., Executive Secretaries.

The central office has been established in Washington. It is, in a way, considered unfortunate that the center of the Study is in Washington, D. C., suggesting to some that this is therefore a Federal project. It is very definitely not a Federal project, but rather an undertaking of the Academy with the primary responsibility remaining in the hands of

the Academy. Only by virtue of the generous and essential assistance of the two cooperating government agencies has it seemed wise in promoting the efficient conduct of the Study to have the office in Washington where full advantage may be taken of the personnel and resources of their statistical divisions. In addition to the executive staff, a limited field staff will be added to assist States to organize the study locally and to carry out that portion of the study dealing with pediatric education. This field staff, together with members of the executive staff, will contact State Pediatric Organizations, stimulate their interest in the survey and render consultative service to the State executive staffs. After the first year of the study, the field staff will serve to maintain contact with local groups, leaving the central executive staff relatively free to analyze and study the data collected and to prepare a report.

It is felt that the part of the survey dealing with pediatric education, which largely concerns medical schools, can best be made by a staff working out of the central office. Where possible, however, local interest and participation will be invited.

In each State it is proposed that the State Chairman of the Academy appoint a study committee of Academy members with himself, or someone appointed by him, to act as chairman. In addition there should be a State advisory committee composed of representatives from such groups as State Board of Health, hospital association, nursing organizations, welfare groups, farm groups, labor, and others. Subcommittees of technical members could be formed as needed, or individual members could be called on for technical advice.

The State Staff to work under the Academy committee should consist of at least one full-time medical or nonmedical person to act as executive secretary and one clerk-stenographer. Large States may need two or three people, while small States can operate with one, or even possibly part-time services.

North Carolina was chosen for a pilot study in order to test methods and establish procedures before undertaking the study throughout the rest of the country. The Study was supervised by the State Chairman of the Academy; the executive secretary was a health officer on loan from the United States Public Health Service. Enthusiastic support was given by the State Health Department, pediatricians, general practitioners, dentists, and lay groups. Much valuable experience was gained from the use of the survey schedules which were developed to obtain the necessary information on the State level. These schedules are divided into three series. The first series had been integrated with those already being filled out by the Hospital Commission and will serve to supplement them with data of pediatric interest. The second series deals with general health services such as preventive services available in health jurisdictions, medical well-child conferences, dental services, mental hygiene services, services for the physically handicapped, communicable disease control, school health and public health nursing. The third series is intended to obtain information from personnel engaged in private practice: pediatricians, general practitioners and dentists. With the Study in North Carolina now reaching a successful conclusion, it is ready to be launched in other States.

The results to date from North Carolina have been very gratifying. The groundwork and plan of attack were formulated about the middle of October, 1945, and by Jan. 1, 1946, every schedule had been mailed out and a good percentage of them was being returned. The thirty-seven pediatricians of the State were the central focus of the Study; the cooperation received from them was the keynote of its success. To as large an extent as possible, their load was lightened by the efforts of the executive secretary. Letters were prepared for their signature to be sent to the general practitioners, hospitals, and health agencies with whom they were requested to get in contact. Of the total number of general physicians and surgeons (2,034) throughout the State, 60 per cent have returned their questionnaires up to date. In comparison with the normal expectancy of returns from questionnaires of this nature (about 33 per cent) this is a very gratifying result. The questionnaires dealing with general health services were handled with the cooperation of the Public Health Department of the State. Of the total of seventy-two sent out to the Health Districts, returns have been received from fifty-eight, or 81 per cent, and it is expected that a complete 100 per cent result will be obtained soon.

In a detailed description of the questionnaire schedules, Dr. Bain emphasized the fact that they are not yet considered in final form. They have been through many revisions, and they are to be revised again in the light of the experience gained in North Carolina. Revised schedules, instructions for their use, and suggestions resulting from the Pilot Study are now being put together in the form of a field manual for the use of State Chairmen and Executive Secretaries.

In describing the further conduct of the Study, Dr. Hubbard emphasized the responsibility of the pediatricians themselves. The Study was originally undertaken as a result of action arising in a meeting of the Academy as a whole. It is an attempt on the part of physicians to evaluate health services rendered by themselves and others concerned in the health and welfare of children. This effort will be successful only in so far as the responsibility is felt and accepted by each and every individual member of the Academy. In order that the Study may get well under way before this coming summer, the State Chairmen were requested to give thought now to the organization of programs within their own States so that they may be prepared to launch the Study in their respective areas by the first of March. This then would allow from three to four months for the actual conduct of the Study before the summer season. If it does not get well under way before summer, it will drag into next fall and winter and much of its purpose and value will have been lost.

Much discussion revolved around the question of the use to which the material gathered from the States is to be used. One of the valuable aspects of conducting the study of health services at the State level is that each State can work out its own pattern in accordance with local conditions. Having done so, each State will then have factual material available which may serve as a basis for drawing up plans for improving the health services within its own boundaries. Some States may choose to analyze the data themselves in their own way for their own purposes. There can be no objection to such a procedure. To *all* States will be made available the results of the Study following the digestion and analysis by the central technical staff. Eventually, and it is to be hoped that it will be without delay, a factual report will be published. Certain of the State Chairmen questioned the use to which this report will be put. It is not considered the function of the Study personnel to determine at the present time how this material is to be used. Obviously the whole Study will be valueless unless it can serve as a basis for recommendations to be made at a later date on the foundation of solid factual data. But the Study personnel is not concerned with the formation of recommendations; the job in hand is to gather the facts and analyze them as accurately and honestly as possible for presentation to the Academy. It will then be the responsibility of the Academy or its chosen representatives to outline any course to be taken as a result of the Study. Assurance was given by the Director that we are not now concerned with steering the ship in any particular direction but rather in determining what equipment it has aboard.

DISCUSSION

DR. HENRY F. HELMHOLZ.—We hope to get from this study information which will enable us to outline measures for insuring proper care of infants and children in every state in the union as well as in the various parts of the States. You have heard how the Study Committee of the Academy with the splendid help and cooperation of the Children's Bureau and the Public Health Service is attacking the problem and how it hopes eventually to gather the necessary information that will make it possible to outline for each community of each state the necessary steps to serve the local child population adequately. It will give us for the first time, on a national scale, the scope of the problem and the great variations in the type of medical care available at present and what type of care is necessary to develop for children in different parts of the country.

It has already been shown that a medical organization, the American Academy of Pediatrics, can set up an investigation for the welfare of American children so well that it meets the approval of two governmental agencies and they are willing to back the investigation with means that far exceed ours. By the cooperation of the Academy, the Children's Bureau, and the Public Health Service, the present status and essential needs for children in

all parts of our country can be determined. This information is fundamental before any adequate program of infant and child care can be worked out. It should bring out as never before where the pediatrician fits into a child care program for *all* children.

What are the functions of a pediatrician? Are we pediatricians fulfilling our entire duties when we all continue to do general practice limited to an age period? There are only enough pediatricians to care for one-tenth of the children on this basis. How are we going to influence the life of the other nine-tenths of the child population that do not have access to the care of a pediatrician? Do we plan to increase our number tenfold to care for all the children or shall we function by raising the standard of child care given by the general practitioner: As educators in a graduate school system or as consultants in state and county health departments?

Unlness we have definite ideas as to the solutions of these problems, we will not be in a position to offer constructive advice to the national planners of child health. As you know, there are several bills before Congress now that have to do with child health, all with the object of giving greatly increased services to children. It is my belief that our survey or a similar survey must be available before the work can be started. It would seem that state plans, and the planning is to be on a state basis, cannot be made without such a survey. It would require many months of work by the state departments of health to gather the information that the Committee aims to obtain in its study. Since the training of the necessary personnel will take many additional months, I am not worried that legislation will be passed before the Committee completes its study.

At this point it is well to recall that in 1910 there was not a well-organized clinic in the United States for the training of pediatricians, there was no pediatric research as such, and today, according to the opinion of foreigners, this country leads the world in this field. This is an accomplishment in education and research of which all may well be proud. Pediatric education has by no means reached its limits and there is still great need for pediatric research. It is this function of still further raising standards that deserves closest attention. I am hopeful that our survey will indicate the way in which this can be accomplished most successfully and economically. If the care of all children in this country is to be of the highest order, will it be necessary to develop a new type of pediatrician, one who acts only as a consultant as the English type of pediatrician does or will this new type be an educator, as well as consultant? Will pediatric allergists, cardiologists, gastroenterologists, urologists, and all the rest have to develop, or will the development of hospital units which are small at the periphery and complete centrally, adequately solve the problem of the unusual diagnostic cases?

I think our survey is going to be helpful in demonstrating the stupendous size of our problem and the necessary strides we will have to make if we are to measure up to the needs that this survey will show. There is much work for the pediatrician to do. There is need for many more highly trained pediatricians if all the children in this country are to be adequately taken care of.

Just as the pediatricians in the past have led the way in the application of preventive measures to medicine, so the survey which our Committee is making should indicate to the medical profession how the entire problem of medical care for all, both preventive and curative, is to be attacked and plans made for its solution.

THE CHAIR.—If we had not had in Washington a man of Dr. Wall's peculiar ability to represent the Academy, I do not believe in the Academy membership we could find a man as able to do the work he has done or a man who would give more time and sincere thought to it than Dr. Wall. Dr. Joseph S. Wall, who has promised to stay on the job when he is no longer president, will now give the report of the Legislative Committee.

Report of Pending and Proposed Legislation on Child Health

This report on legislative proposals must be made in a dual role, the recorder holding two portfolios in the cabinet of the Academy, to wit, that of president and of chairman of

the committee on legislation, having been continued in the latter post during the past year by direction of the Executive Board.

A considered effort will be made to present to the Fellows of the Academy a factual and documentary report of the creation and content of proposed congressional bills affecting their interests and those of the specialty to which we are devoted.

An analysis of legislation must of necessity point out features which in the opinion of your officials appear inimical to our profession of pediatrics and to medicine in general, of which we are necessarily a part. But it must be borne in mind that such a story to a certain extent reflects the personal views of the historian and that in its recital the listener should heed the caution of radio that the views expressed by the commentator are his own and not necessarily those of his sponsor, the Academy of Pediatrics.

The very purpose of this session today is to bring to light the opinions of our members through free discussion of the problems which now confront us so as to crystallize the Academy's beliefs as a committee of the whole in general meeting.

There are now before the Congress three measures in which we possess an intimate interest as all three purpose the extension of health services to mothers and children so that far greater accomplishment for their health and welfare may be achieved in the future, which represents the very goals for which this Academy was founded and toward which it has constantly labored since its inception.

The Academy's record in the past, from an altruistic and humanitarian standpoint, cannot be challenged and its continued activity in such direction with even increased momentum will be related to you this morning by Dr. Sisson, chairman of the postwar study group constituted by you at the St. Louis meeting of last year.

The aims of the Academy and of its individual members are encompassed in the first paragraph of this committee's original report, namely: "To make available to all mothers and children in the United States of America all essential preventive, diagnostic and curative medical services of high quality, which used in cooperation with the other services for children, will make this country an ideal place for children to grow into responsible citizens."

Our objectives and aspirations coincide exactly with those of the more vocal social and political reformers, utopian evangelists, and some fanatical crusaders whose enthusiasm too often outruns the boundaries of common sense and realism. We, too, seek diligently the Holy Grail, symbolic of perfection in mother and child protection from the vicissitudes of ill health. Our quest differs not from that of the social crusaders, our goals and desires are equally alike, but the methods of attaining these ends, from our point of view, do not agree in many respects with the programs thust upon us, usually without our knowledge and without the utilization of that experience we possess in the practice of pediatrics which should be recognized as necessary in determining the success or failure of any projected planning for child betterment.

S. 191, the so-called Hill-Burton bill, has now passed the Senate and has been sent to the House. The bill was entirely rewritten in committee before its adoption by the upper house of Congress to which it was presented under the title, "Hospital Survey and Construction Act."

S. 191 proposes a program of Federal grants-in-aid to assist the States:

1. To determine their hospital and public health facility needs through state-wide surveys

2. To develop state-wide programs for construction of facilities needed to supplement existing facilities so as to furnish adequate hospital, clinic, and other similar services to all the people of the State

3. To construct such facilities for public and voluntary nonprofit hospitals and for public health centers in accordance with such programs

The kinds of facilities which could be constructed under the program:

1. Public health centers—which are defined to mean a publicly owned facility for the provision of public health services, the scope of which would be a matter for determination by State law

2. Hospitals—general, tuberculosis, mental, chronic disease, and other types except those furnishing primarily domiciliary care

3. Related facilities such as laboratories, outpatient departments, nurses' homes, and training facilities, and central service facilities operated in connection with hospitals

As used in this bill, the term "construction" is also broadly defined to include:

1. Construction of new buildings

2. Expansion, remodeling, and alteration of existing buildings

3. Initial equipment of such buildings

4. Landscaping the site, architects' fees, legal counsel, and all other expenses incidental to construction, excluding the cost of off-site improvements, and, except in case of public health centers, the cost of acquisition of land.

The bill is one requiring "matching," the range of Federal percentages alloted would vary from 75 per cent for the poorest States to 33⅓ per cent for the wealthiest States.

The administration of the Hill-Burton Hospital Survey and Construction Act is vested in the Surgeon-General of the United States Public Health Service with certain powers assigned to the Federal Security Administrator, who appoints a Federal Hospital Council to consist of nine members and who is given the right of approval or disapproval of administrative regulations made by the Surgeon General. Should the Surgeon General refuse to approve any application for hospital construction, or should the State be dissatisfied with the action of the Surgeon General, "such State may appeal to the U. S. Circuit Court of Appeals for the circuit in which such State is located," with the right of further appeal or review by the U. S. Supreme Court.

The original Hill-Burton hospital construction bill met with the approval of the American Medical Association and of the various hospital organizations.

On November 19, 1945, the President transmitted to the Congress a message containing a request for legislation for adoption of a national health program. (Seventy-ninth Congress, first session, document 380.)

Upon the same day, immediately following the reading of the President's message, Messers Wagner, Murray, and Dingell deposited in the legislative hoppers their fourth National Health Act, now numbered S. 1606, the last three figures being reminiscent of one of many great accomplishments of medical therapeutics in recent years, achieved under a system of free enterprise.

This latest legislative proposal emanating from the triumvirate of Shadrach, Meshach, and Abednego, reappeared on the scene from their fiery furnace where medicosocial legislation is welded, contains many new, supposed concessions to practitioners of medicine, evidently inserted in an effort to remove opposition, such as: the right of choice of physicians, which right is in reality subject to marked limitations, the choice of methods of payment of medical fees and other blandishments of supposed allure.

S. 1606 in Title I, Part A, is concerned with grants to States for Public Health Services, more especially the control of venereal disease and of tuberculosis but states that the term "public health work" shall include customary and accepted functions, services, and activities of public health agencies, all of which are enumerated in some detail.

At the close of this section [Part A (1)] there occurs a remarkable pronouncement in view of the accepted conception of public health measures, to wit: "The term does not include: construction of hospitals, water supplies, sewerage or other waste-disposal systems, or of other facilities; operation or maintenance of hospitals (except hospitals for persons afflicted with infectious diseases), water supplies, sewerage or other waste-disposal systems; and related matters." Such hygienic considerations certainly enter into the question of mortality and morbidity which public health measures are supposed to prevent in so far as possible, as forcibly pointed out by Dr. Grulee in his letter to Senator Pepper, yet the new Wagner bill absolutely prohibits the assistance of public funds for the aid of the States in correcting faults and failures in the modalities for better health just enumerated.

Part B is in reality an abbreviated version of the Pepper bill dealing with grants-in-aid to States for maternal and child health services, including the care of crippled children, al-

though much of the detail of S. 1318 has been omitted. State plans must be approved by the Chief of the Children's Bureau who, with the approval of the Secretary of Labor, "shall make and publish such rules and regulations as may be necessary to the efficient administration of this part."

Title I, Part C, is entitled "Grant to States for Medical Care of Needy Persons." In approval and administration of plans, this part falls within the baliwick of the Social Security Board. This is also the first instance in which a Wagner health bill has recognized the poor as coming within its social benefits.

The local administration of Part C is entrusted to a "single State public assistance agency." It is well to note the several administrative categories now being established under the bill, although the content of each Title and part consists of the distribution of medical services.

Should a "needy person," normally a ward of the State public assistance agency, contract a venereal disease, the question as to where and by whom he would receive treatment would become a ticklish one as between the United States Public Health Service and the State public assistance agency, to say nothing of the possible event that he might be a minor under 21, when even the Children's Bureau might have occasion to direct medical therapy according to the tenets of the Pepper bill! In any event, the prognosis as to cure may be jeopardized through the individual's misfortune not to fit snugly into any angle of the triangle which fences him in. Should the much touted rapid treatment be indicated, the slow motion involved in conflicting administration detail might well delay a cure.

Strange to relate, in Part C of Title I, relating to needy persons, an elusive ghost of a "means test" makes its appearance from behind the backlog of socialized medicine. On page 28, line 4, (8), appear the words: "provide that the State agency shall, in determining need for medical care (of needy persons) take into consideration (A) the requirements of individuals claiming medical care under the plan, and (B) any income and resources of an individual claiming medical care under the plan, which must be taken into consideration with regard to an individual claiming assistance under a State plan approved under the Social Security Act, as amended."

Title II, Prepaid Personal Health Service Benefits (health insurance), allocates the distribution of health services to the authority of the Social Security Board and the Surgeon General of the United States Public Health Service, the latter being directed to "perform the duties imposed upon him by this Act, under the supervision and direction of the Federal Security Administrator, and after consultations with the advisory committee hereinafter established (an entirely impotent body) as to questions of general policy and administration, and in consultation with the (Social Security) Board shall also have the duty of studying and making recommendations as to the most effective methods of providing personal health service benefits, and as to legislation and matters of administrative policy concerning health and related subjects."

The remainder of the National Health Act enumerates the details of governmental health insurance, administrative methods of accounting, and other minutiae for the consideration of which time is lacking.

Failing in the possession of a coordinating Secretary of Health of cabinet rank, the whole plan envisages confusion worse confounded, the functions of the practice of medicine being usurped by the Surgeon General of the United States Public Health Service, the officials of the Children's Bureau, and the Federal Security Board. One is reminded of the witches in *Macbeth* peering into their boiling pot as they watch the effervescence of their conglomerate broth and one may reflect the saying of the witches, "Double, double, toil and trouble; fire burn and cauldron bubble. The earth hath bubbles as the water has, and these are of them"!

The Pepper bill, S. 1318, is of more immediate concern to the members of the Academy.

Any consideration of this piece of legislation should embrace a background of history, an exploration of which reveals much of interest. The Pepper bill repeats the oft made mistake of medical planners and social commandos in conceiving in secret legislative acts which have as their aim the utilization of the services of physicians as a vicarious outlet for their

presumably altruistic motives, if they may be called such—whether political aspirations or selfish considerations of a personal nature are implicated in this urge for social reform to be conducted at the expense of a learned profession—the question remains within the field of conjecture.

So far as the Academy of Pediatrics is concerned, no inkling of the legislation contemplated in the Pepper bill was brought to the attention of its officials until the morning of July 6, 1945, when a remark made to the writer, who was that day departing on vacation, by a member of the Children's Bureau gave notice that something in the way of maternal and child health legislation might be proposed by the Senate Subcommittee on Education and Labor.

One's suspicions were naturally aroused by published statements of officialdom in praise of the EMIC program and the desirability of projecting its principles into the postwar era, a forecast to which your Executive Board took vigorous exception some months ago, with a certain degree of prophetic wisdom which subsequent events have now justified.

The distinguished Senator from Florida in his speech introducing the bill bearing his name credits the inception and development of S. 1318 to certain groups of individuals whose testimony before his subcommittee and whose statements of record urged immediate and broad expansion of maternal and child health services. To quote the words of this speech:

"In administering the program of services for children under the Social Security Act, the Children's Bureau has sought the advice and counsel of outstanding physicians, social workers, and members of other professions who are authorities in the fields of child health and child welfare, and of citizen groups concerned with the problems of children. For the past year the Bureau's technical and general advisory committees have been reviewing and reappraising the programs in relation to present needs. Their recommendations, in turn, have been studied by the National Commission on Children in Wartime. Members of this commission include the chairman of the Bureau's advisory committee and representatives of labor, farm, women's, church, and professional groups.

"The present bill embodies the essential recommendations of this distinguished group of citizens, which has released a report entitled 'Building the Future for Children and Youth.'"

Senator Wayne Morse, one of the nine sponsors of the Pepper bill, writes to a physician in Oregon as follows: "As to S. 1318 it was drafted, so I understand, by the Women's and Children's Bureau. . . ."

The Associate Chief of the Children's Bureau in a report read to a joint meeting of the Advisory Committee on Maternal and Child-Health Services and Services for Crippled Children, on November 8, 1945, makes the following statement: "Today we are asking your advice particularly on certain legislative proposals (S. 1318) which have grown out of your recommendations on the expansion of the maternal and child health and crippled children's programs and those of the National Commission on Children in Wartime." Also the statement that: "Since the beginning of the subcommittee's work in 1943, the staff of the committee has kept in close touch with the Children's Bureau."

Your representatives have always pleaded for cooperation with other agencies in promoting the welfare of children and in collective agreement upon occasions where misunderstandings and differences of opinion were encountered. These features in promotion of harmony and conciliation have been conspicuously absent in the formulation of recent legislative proposals, although as late as one month before the introduction of the Pepper bill, in a communication to the Children's Bureau expressing appreciation for its aid to the Academy's postwar committee, the following closing paragraph was written: "It is the earnest hope of the Academy that through its State-wide organization and the assistance of its entire Fellowship of some 1,600 members, in conjunction with the valuable contributions of the United States Public Health Service and the Children's Bureau, this important study of child health needs, together with the facilities for meeting them, will provide a considered basis for future planning under the joint aegis of pediatricians in association with the Federal agencies vitally concerned in the health and welfare of children."

That this view was likewise entertained in theory on the part of officialdom, although subsequent events have indicated that it was largely theoretical, is shown in the statement of the Associate Chief of the Children's Bureau published in the JOURNAL OF PEDIATRICS of October, 1944, to wit: "Any detailed plans for children in the postwar period should be carefully formulated and widely discussed before they are crystallized into recommendations for legislation and should be of particular concern to the American Academy of Pediatrics as well as to many other professional organizations and citizen groups."

Analysis of the Pepper Bill, S. 1318

(Identical bills have been introduced in the House, namely:
H.R. 3927, by Representative Mary T. Norton of New Jersey
H.R. 3994, by Representative Augustine B. Kelley of Pennsylvania
H.R. 4059, by Representative Ellis E. Patterson of California)

On July 26, 1945, Senator Claude Pepper of Florida introduced the Maternal and Child Welfare Act of 1945, for himself and the following nine cosponsors: Mr. Walsh, Mr. Thomas of Utah, Mr. Hill, Mr. Chavez, Mr. Tunnell, Mr. Guffey, Mr. La Follette, Mr. Aiken, and Mr. Morse. The bill was referred to the Senate committee on Education and Labor.

Among the purposes of the bill, the Senator from Florida in his speech states: "This bill, which I hope will have early consideration by the Congress, *provides for gradual yet substantial expansion of* existing State programs of child health and welfare instituted a decade ago under the Social Security Act. Step by step, over a period of the next ten years, the bill makes possible the enlargement and strengthening of these public services in accordance with the requirements of each State."

It may be said that no "existing State programs of child health and welfare initiated a decade ago under the Social Security Act" embrace the revolutionary principles advocated in S. 1318 but, on the contrary, the provisions of Title V of that Act provide government subsidies for three types of service, i.e., maternal and child health, crippled children and child-welfare, to beneficiaries *especially in rural areas and in areas suffering from severe economic distress*, with absolutely no provision that a free government "dole" be granted to every pregnant mother and to every child under the age of 21 within the United States including the District of Columbia, "or any Territory or possession of the United States."

The Social Security Act in no way provides for unlimited free medical services for "all mothers and children in the State or locality *who elect to participate in the program*," provided that the mothers be pregnant and that the *children* be under the age of 21 years, an age limitation which may permit some beneficiaries to enter both categories with much consequent confusion to both patient and administrative authorities as to where they rightly belong!

The bill proposes to provide for the general welfare, thus possessing the cloak of constitutional respectability under Section 8 of the constitution which provides that the Congress shall have power to lay and collect taxes, duties, etc., to pay the debts and provide for the common defense and *general welfare* of the United States.

TITLE I

MATERNAL AND CHILD HEALTH SERVICES

Sec. 101. Page 1, line 9, and page 2, line 1 et seq.:

The bill states: "For the purpose of enabling each State to provide and maintain services *and facilities* to promote the physical and mental health of mothers during the maternity period, and of children, including medical, nursing, dental, *hospital, and related services and facilities* required for maternity care, preventive health work and diagnostic services for children, school health services, care of sick children, etc." Yet Senator Pepper (speech of presentation—page 4, paragraph 6) says: "The bill does not contemplate a construction program, such as is provided for in S. 191 or in similar provisions of other bills. But pending the passage of a broad program for construction of health facilities, State health departments

will *be able to use some of the funds provided* in this bill for necessary remodeling of facilities.''

Page 2, lines 9 and 10:

Here is stated: ''including demonstrations and training of personnel for State and local maternal and child health services.'' Does this mean the establishment of a kind of medical West Points as proposed in Congressman Dickstein's H.R. 713 or of State medical normal schools? Probably not. The training will be Federal and be provided by the Children's Bureau as directed on page 6, lines 1 and 2, wherein the Bureau is authorized to provide ''opportunities for postgraduate training of professional and technical personnel.'' Where and how such training will be effected under the tutelage of the Children's Bureau is not further explained in the bill.

Page 2, line 13:

For the fiscal year ending June 30, 1946, there is authorized the sum of $50,000,000, ''and for each year thereafter a sum *sufficient to carry out the purposes of this title.*'' The absurdity of expecting this amount of government moneys to cover the necessities of all who would embrace the benefits of the Pepper bill, an unpredictable portion of some 3,000,000 mothers and some 40,000,000 children under the age of 21, need not be dilated upon, except to remark that after the first year the appropriations have no limit but the stratosphere in arithmetical digits. In this respect the bill is patterned on many previous legislative acts which are steered through the Congress in a manner similar to a poker game with a penny ante to begin with, but with an ultimate jack pot resembling a mountain of blue chips. The cost of this legislation would in the end enter the realms of billions, not millions if its proponents have their way.

Page 2, lines 15 to 19:

Herein appears one of the many inconsistencies in the bill. The individual States are authorized to prepare plans for *developing* such programs and *providing* such care and services (named hereafter) which must be *approved by the chief of the children's bureau*, but there are certain other ''musts'' associated therewith, the first and most emphatic ''must'' being admittedly the approval of the Children's Bureau.

The second ''must'' appearing in Sec. 103 (a), as well as in 203 (a) and 303 (a), respectively, prescribes what the State plans shall embrace and if complied with, according to the letter of the law laid down in this section, page 8, lines 5, 6, and 7 (the concluding paragraph), ''The Chief of the Children's Bureau *shall approve* any plan which fulfills the conditions specified in subsection (a).'' In this respect, the history of the EMIC program is replete with the conflicts and disagreements arising from the apparent authority of the States to originate plans and of the Federal government defining in detail the regulations under which such plans should have their birth and development.

Furthermore, to pass ahead for the moment and to visualize confusion worse confounded, one reads on page 8, under the heading Federal Advisory Committees, Section 105 beginning on line 9, the following: ''The Chief of the Children's Bureau *shall formulate* general policies for the administration of this title. . . .'' But previously in the bill [page 4, line 9, (4)] appears the directive that the State ''provide for the administration of the plan by the State health agency. . . .'' Who wins the tossup concerning this division of authority?

What about the ''administrative policies'' of the Children's Bureau which will govern the proposed Act? One might turn for an answer to experiences under the EMIC program and more especially to Information Circular No. 1, issued December, 1943, the title of which on the front cover is ''Administrative Policies'' but including within its covers what can only be construed as ''regulations.'' The foreword states in part as follows:

''The Children's Bureau will use these policies as the basis for approval of the related portions of State emergency maternal and infant care plans. . . .'' ''The administrative policies of the Children's Bureau have been developed within the framework of the Congressional acts and the *regulations* of the Secretary of Labor, and in accordance with the intent of Congress as shown by the legislative history and as interpreted by the Bureau and by the

Solicitor of the Department of Labor.'' In one section containing six pages of the EMIC Administrative Policies, Minimum Regulation for Hospitals Participating in the Program, the word ''must'' appears three times, ''should,'' three times, and ''shall'' appears forty-seven times!

Apparently, and in fact, the words ''policies'' and ''regulations'' are used conterminously by the administrative authorities of the Children's Bureau and the tremendous power of administrative fiats issued therefrom is admitted by the Associate Chief of the Bureau in a published statement entitled ''The Children's Bureau and Postwar Planning for Child Health'' [JOURNAL OF PEDIATRICS, Vol. 25, No. 4, October, 1944, p. 351], to wit: ''The regulations of the Secretary of Labor governing allotments of funds to States for the EMIC program are published in the Federal Register *and have the force of law.*'' Violation of such policies and regulations by a long-suffering State will not only violate the *law* according to the above paragraph) but will instantly penalize the State by having the paternalistic purse snapped shut even if, in the administration of the plan (in theory formulated by the State) ''there is a failure to comply substantially with *any provision required* by section 103, or section 203, or section 303, respectively, to be included in the plan, he (the Secretary of Labor) shall notify such State agency that further payments will not be made to the State under such plan, or . . .'' and here follows a provision that the State will be put in 4F until it falls into line or has been rehabilitated (page 27, line 24 et seq.).

Let us return for the moment to the statement of the Associate Chief of the Children's Bureau already quoted, namely, that the policies of the Bureau have been developed within the framework of the Congressional Acts and the regulations of the Secretary of Labor, and in accordance with the intent of Congress . . . and as *interpreted by the bureau and by the solicitor of the department of labor.''*

This is written to draw attention to United States differences between bureaucratic and democratic procedures.

During the history of EMIC the writer has had occasion to bring to the attention of the Children's Bureau certain interpretations of its own and of the solicitors of the Department of Labor, which were obviously at variance with the wording of the law as viewed by the mind of a layman and not through the spectacles of a lawyer clouded by the snarls of legal technicalities. [JOURNAL OF PEDIATRICS, Vol. 26, No. 1, January, 1945, pp. 93 and 94.]

Now comes forward a champion of justice and right thinking who has much the same views and dares to express them in no uncertain terms. He is the Honorable Lewis B. Schwellenbach recently appointed as Secretary of Labor, formerly a Senator in the Congress and latterly a judge of the United States District Court of the State of Washington. Three days after taking office on July 1, 1945, he issued the following statement after conference with President Truman, who gave to it the presidential blessing as indicated in the closing paragraph of the press release, to wit: ''The President indicated considerable interest and told him (the Secretary) that he would issue it (the order) from the White House.''

> Lewis B. Schwellenbach, the new Secretary of Labor, in an unusual move today served notice on his departmental associates that he expected them ''to execute the laws'' and not to ignore or attempt to circumvent them because they thought these statutes should have been written or interpreted differently by Congress and the courts.
>
> The Secretary's action was disclosed in a White House statement which said that ''with the approval of the President'' Mr. Schwellenbach ''has issued following general order No. 1'':
>
> ''I am issuing this order *now*, before any specific instance arises so as not to subject anyone to embarrassment. Perhaps because my previous experience has been in the legislative and judicial branches of the government, I am peculiarly sensitive to the importance of this question.
>
> ''I must insist that in this department there is given full recognition to the fact that it is the function of this department to execute the laws. The duty of

an officer in this department is to accept the laws as Congress has written them and as the courts have interpreted them.

"The fact that he may think the Congress should have written or the courts should have interpreted a law differently in no case justifies him in ignoring or attempting to circumvent the law. I will expect full cooperation in this policy." (*Washington Evening Star*, Tuesday, July 3, 1945.)

The writer has quoted at length the Secretary of Labor's criticism of the practices of some Federal departments in evidence of the fact that legislation is often subjected to the whims and fancies of those in authority in subordinate positions with evil results and would venture the observation that *of such stuff is bureaucratic government by regulation and regimentation composed.*

Page 2, line 25:

Here appears the wording "children under twenty-one years of age." When is a child not a child? Should the Congress so specify this designation of the word "child," it would expose itself to sharp criticism of having abducted through the draft, and perchance in some possible future military service law, mere children of 18 and 19; child labor laws must need be expanded in scope; the "age of consent" laws promptly revamped, while the study and practice of pediatrics should in all equity be enlarged to embrace a portion of geriatrics!

Page 3, line 15 (2):

One may wonder what are "the special problems of maternal and child health"—how are they to be ascertained and how qualified?

Page 5, line 19, Sec. 103:

Here is delineated the necessary attributes of a State plan in order to qualify for the receipt of Federal monies, subject to the limitation that they must be *approved* by the Chief of the Children's Bureau, although the latter *shall* approve such plans if in accordance with the requirements of this Sec. 103, whether the Chief likes them or not, all of which constitutes a sort of Washington Merry-Go-Round.

Now witness the beginnings of socialized Federal and State medicine.

Page 4, line 3:

Following the phrase containing a directive that the State provide *facilities* (although not a constructive program in the opinion of the framers of the bill) appear the words that services and facilities "furnished under the plan . . . shall be *available to all* mothers and children *who elect* to participate in the program." It is obvious that this feature of free Federal medical services extended to all who would embrace them constitutes a pilot exploration, insidious, revolutionary, and devastating in its effects upon the private practice of obstetrics and pediatrics, which, if enacted into law, would mean annihilation of both special branches of medicine and the liquidation of their adherents upon whose services the government depends for the distribution of its beneficences.

Herein goes into the discard any "means test" or financial qualification as to need which sets apart this proposed Act as one of startling novelty in the annals of Congressional legislation. Even the EMIC program was qualified by a general "means test" in that its benefits accrued only to the wives and infants of servicemen of the fourth, fifth, sixth, and seventh grades and to aviation cadets, the lowest paid classes in the Armed Forces. The legislative history of EMIC shows, also, that some appropriations committeemen questioned sharply the omission of a further means test in this measure.

Congress, together with the American people, believe in a means test. As a matter of fact, the Federal government insists upon the most widespread application of the means test ever required, namely, the income tax, which is based directly upon the financial situation of the individual.

Appropriations for the care of well children of working mothers under the Lanham Act are based upon a sliding scale of the means test and contributions are insisted upon from the parent embracing the facilities of these day nurseries.

From a Report prepared by Dr. Allan C. Butler at the direction of the Advisory Committees of the Children's Bureau assembled Nov. 8 and 9, 1945, the following is an excerpt:

(The committees in joint session)—Disapproval of paragraph (3), page 4, line 3 of Sec. 103. The following modification of that paragraph was favored: "(3) provide that as services and facilities are furnished under the plan they shall be available to all mothers and children in the State or locality *who are determined by the state health agency to be eligible and* who elect to participate in the benefits of the program, and that there will be no discrimination because of race, creed, color, or national origin, and no residence requirement";

The following explanatory paragraphs occur in the report of the subcommittee to the general meeting which adopted the above modification of a section of the Pepper bill relating to a means test:

"Among the 14 who favored this modification were members who were opposed to the means test in principle, but felt the above modification was essential to a tolerant consideration of such legislation at the present time.

"It was also felt by some that if the application of a means test was left to each State that the ultimate development through the Nation of efficient plans for medical care, such as considered here, would not be jeopardized. It was felt by others that this was a wholesome endorsement of State rights under such a program."

Several members of the Academy present advocated strongly that a means test be incorporated in the bill but were outvoted. The ambiguity of the phrase adopted (who are determined by the State health agency to be eligible) has been questioned even by the officials of the Bureau, especially in regard to its interpretation as to whether the directive is compulsory or only permissive on the part of the States. One might seriously criticize the clarity and the efficiency of such a modification of the bill if it were to be presumed to incorporate what is commonly known as a "means test."

Page 4, line 9, (4):

Note the words "provide for the administration of the plan by the State health agency . . . and for appropriate coordination of the plan with the general public-health and medical-care program of the State health agency: *provided*, that in carrying out the purposes of this title, the State health agency may develop agreements or cooperative arrangements with other State or local *public* agencies whose functions include the provision of services similar or related to the services furnished under the State plan." The word "public" used in this section is not akin to the "old tie schools of England" called public, but in reality private, but means governmental as opposed to private—a differentiation recognized on page 23, lines 16 to 19, also relating to cooperation "with State and local agencies, *public* and *private*, concerned with child health, education, child welfare, and related subjects."

This directive first quoted constitutes a prohibition (by omission) of agreements or cooperative arrangements with such private agencies as the Blue Cross, industrial indemnity sick benefit plans, prepayment plans of private organizations medically or otherwise initiated, but is at variance with and constitutes an inconsistency with the directive on page 6, line 3 et seq., stating that State plans will provide "such *use* of health centers, hospitals, clinics, and health service agencies, public and *voluntary*, as will achieve the satisfactory distribution and coordination of preventive, diagnostic, consultative, and curative services for mothers and children furnished by general practitioners, specialists, public health personnel, laboratories, and others." The first directive is prohibitive of agreements with private (voluntary) agencies, the second would seem permissive—but who knows what is meant by either except, perhaps, the interpretative ruling of a solicitor of the Department of Labor which may later appear as a Federal fiat in the columns of the Federal Register.

Page 4, line 20: "be made part of the State plan for maternal and child health services submitted in accordance with the provisions of Title V, part 1, of the Social Security Act. Senator Pepper in his speech (page 3, paragraph 5) says: "The bill, which I hope will receive early consideration by the Congress, provides for gradual yet substantial expansion of existing State programs of child health and welfare initiated a decade ago under the Social Security Act."

If that be the purpose of the bill, what is the necessity of usurping by new, over-all legislation, strikingly revolutionary in character, the orderly, legal functions of established governmental agencies which have accomplished much acknowledged good in aid of maternal and child interests throughout the States, but which have done so under careful, yearly scrutiny of regularly ordained appropriation committees of Congress after convincing justification of needs presented by officials of the bureaus involved?

Dr. Elliot's statement to the Executive Board on Monday shows this method of approach was given consideration by the Senate Subcommittee.

Page 4, line 6:

The State is commanded to provide "such methods of administration as are necessary for the proper and efficient operation of the plan" while on page 29, line 8 (Sec. 501), "The Chief of the Children's Bureau, with the approval of the Secretary of Labor, shall *make* (note the word make) and publish (it is presumed in the Federal Register, thereby having the force of law) such rules and regulations as may be necessary to the efficient administration of this Act." One might with unquestioned propriety ask Who's Who, under such ambiguous phraseology.

Page 5, line 7, (B):

The State is commanded to construct "standards for professional personnel rendering medical, dental, nursing, and related types of care or services, such standards to be *established* by the State health agency. . . ." EMIC and other experiences prove beyond peradventure that the Children's Bureau and not the State agencies have heretofore established such standards for professional personnel and for hospitals, in evidence of which we have quoted EMIC Circular of Information No. 1 with its array of "shoulds," "musts," and "shalls." This would answer the question Who's Who.

Page 5, line 13:

The State is directed to provide "such methods of administration of medical care as will insure the right of mothers and children, or persons acting in their behalf, "to *select*, from among those meeting standards prescribed by the State health agency in accordance with methods set forth in the State plan, the physician, hospital, clinic or health service agency of their choice (provided that the physician, hospital, clinic, or health service agency selected may refuse to accept the case), and where no such selection is made, the State plan shall set forth the method by which care will be *made* available." Herein, according to the proponents of the measure, lies the great virtue of the bill in possessing choice of physician, hospital, or clinic, but what are the limitations of such choice?

They are (1), only from among those meeting "standards" theoretically prescribed by the State health agency, but in the light of past experiences in the administration of EMIC and Social Security Title V, established by remote control in Washington by regulations alive with shoulds, musts, and shalls, which *have the force of law.*

(2) The bill graciously concedes that a physician, hospital, or clinic, may refuse to accept the case—i.e., not enter the "panel" of preferred and acceptable functionaries. What if the majority of physicians, in the language of Calvin Collidge, do not choose to run the gamut of the slings and arrows of outrageous fortune inherent in the bill? They are without the pale, and so are the beneficiaries of government largess if their chosen ministers of health, whom they may have always sought in times of illness, are not included among the elect.

(3) If the mother or child is thus bereft of medical aid from one of their choice, or if they fail to make a choice, the State will provide it, willy nilly, the element of choice having disappeared and that of compulsion by the State taking its place.

Page 5, line 24:

The question of adequate remuneration "for persons and institutions providing medical care and related services." Who is to establish what is to be considered as "adequate remuneration"? Past experiences with governmental experimental medical practice indicates that remuneration will be far from adequate and that the fee schedules will be established by

bureaucratic edicts which will remain as immutable as the laws of the Medes and Persians and that they will be fixed by remote control almost as distant from some State localities as Iran itself.

Page 6, line 9:

"Payments to individual physicians for care furnished under this title (shall be) on a per capita, salary, per case, or per session basis, or, in the case of consultations or emergency visits on a fee-for-service basis."

In the opinion of the majority of pediatricians (as ascertained by poll) and probably of most physicians, the four methods first named as repugnant to the principles of medical practice and destructive of the sound policy that the laborer is worthy of his hire.

Page 6, line 13, (4):

The key to the question of "ample remuneration" from governmental agencies, fully demonstrated throughout the years in their financial relationship to physicians and hospitals with which we are all familiar, is discovered in the wording of this paragraph, to wit: "Purchase of care from public or voluntary hospitals and other health service agencies included under the State plan (shall be) on a basis *related to cost* for providing such care." The same relationship, to judge from experiences under the administration of the EMIC program, will be applied to remuneration of physicians under S. 1318, namely, on a basis of *relationship only* to the value of the services they render, perhaps even to that of a second cousin twice removed.

Page 6, line 20, (8):

From past experiences, our compassionate sympathy should be extended to the State agencies who are required under this provision to "make reports (paper work) in such form and containing such information as the Chief of the Children's Bureau may from time to time *require*, and comply with such provisions as the Chief of the Children's Bureau may from time to time find necessary to assure the correctness and verification of such reports."

Page 7, line 3, (9):

The State plan must "provide 'cooperation' (of what nature the legislative proponent sayeth not) with medical, health, hospital, nursing, education, and welfare groups and organizations in the State."

Page 7, line 6, et seq.:

Herein, as in most medicosocial legislation proposed or in operation, commandeering and confiscating the intellectual ability of physicians, appears the red herring commonly dragged across the trail, to wit: the *advisory council* and the *technical advisory committees*, both appointed by the State health agency while both are sufficiently and well diluted with "other persons" or "other professional groups" to ensure the physician-membership a diminutive and ineffective minority.

The bill does not even possess the modest controlling interest vested in the selection of members from a "panel," as in the Wagner-Murray-Dingell bill, nor of the indulgence that any three members may demand a meeting of the advisory council as provided in the Hill-Burton bill, S. 191.

Time will not permit a discussion of the failures of "advisory committees," whose advice is eagerly sought when its presence in the administrative picture needs be painted large upon the canvass of cooperation, but in the passage of time such advice is usually relegated to an oblivion wherein its still, small voice disappears in the mist of remembrance only.

These same observations are equally pertinent to the Federal Advisory Committees (page 10, line 8) appointed by the Chief of the Children's Bureau.

Page 8, line 5, paragraph (b):

The bill directs that "The Chief of the Children's Bureau *shall approve* any plan which fulfills the conditions specified in subsection (a), which we have just analyzed. The Chief is unfortunately vested throughout other remaining sections of the bill with the right and prerogative of wielding an administrative tomahawk to effectively decapitate this particular directive in paragraph (b) relating to obligatory approval of State plans.

Page 8, line 8:

Under the title Payment to States. Methods of computing and paying Federal subsidies are outlined under the direction of the Secretary of Labor who will estimate such sums as are to be paid to the States on the basis of (A) reports and (B) "such other data as to such estimated expenditures, and such *investigation* as he may find necessary." Evidently the lengthy reports required from the State agency may not receive full credence.

Page 10, line 8: Federal Advisory Committees.

The Chief of the Children's Bureau shall formulate general policies (note the conterminous meaning of the words policies and regulations to which we have called attention) for the administration of this title after "*consultation* with (1) a conference of State health officers, and (2) an advisory committee composed of professional and public members." The dilution of an advisory committee by such public members who participate in the discussion of policies which are largely or purely medical in nature is certainly open to question, to judge by past performances of similar groups within the knowledge of the writer.

Page 10, line 21:

Here begins Title II, Services for Crippled Children. In wording and phraseology, both Title II and Title III (relating to child welfare services) are quite similar to Title I just considered.

In the first paragraph of Title II appears the directive that the States shall *provide and maintain* services and *facilities* for the care of children who are crippled, otherwise physically handicapped, or suffering from conditions which lead to crippling or physical handicaps. . . . Note again the directive to provide and maintain facilities, although the bill is claimed not to be concerned in construction of facilities. Note, also, the widening vista of the designation of what constitutes crippling, so that it may include, under Children's Bureau interpretation, such conditions as allergy, asthma, diabetes, nephritis, tuberculosis, syphilis, and other chronic diseases to which children are heir. But this is mere quibbling, as the Pepper bill provides medical care for all human beings under the age of 21.

Page 13, line 6, (4):

This paragraph permits agencies such as those of welfare, or State crippled children's commissions, or school boards, now administering crippled children's programs under Title V, part 2 of the Social Security Act, if approved by the Children's Bureau, to continue to function, but they must transfer their functions to the State health agency prior to July 1, 1950, which will necessitate many changes in present State laws.

Page 13, lines 21 and 22:

Repeats the wording of Title I that agreements or cooperative arrangements may be developed by the State agency with other State or local *public agencies*, to which attention already has been called.

Page 16, line 13, (10):

Provides (a) for a General Advisory Council "composed of members of the professions *or* agencies, public and voluntary, that furnish care or services under the State plan." The use of the word *or* in this paragraph, together with its use in a similar paragraph in Title I (page 7, line 8) actually permits the entire elimination of the medical profession from membership on the advisory council, if the State so desires to interpret the proposed statute.

Page 20, line 1: Title III—Child Welfare Services.

The first section, 301, contains a new feature regarding State plans as it authorizes payments in line 15 "to States for use by cooperating State public-welfare agencies which *have developed* jointly with the Children's Bureau, and had approved by the Chief of the Children's Bureau, State plans for developing such programs and providing such services and care." The word "jointly" now appears for the first time in the bill, to indicate a provision for joint State and Federal association in the development of programs.

Page 22, line 25, (6):

The control of the Children's Bureau is now made more complete and certain in a new wording, to wit: (the State) "provide such methods of administration as are found

by the Chief of the Children's Bureau to be necessary for the proper and efficient operation of the plan, . . ."

This, in reality, is the proper wording to explain what will actually be the remote control exercised by Federal bureaus over the States. The wording under Title I, page 4, beginning on line 24 (6) "provide such methods of administration *as are necessary* for the proper and efficient operation of the plan," repeated in exactly the same wording in Title II, page 14, line 5 (6), omits the clause "as are found by the Chief of the Children's Bureau to be necessary," but there can be no shadow of doubt but that the Title III injunction will in reality be the method employed in the similar and otherwise identical paragraphs in Title I and Title II.

Page 23, line 16, (8):

This paragraph introduces a new wording as contrasted with comparable paragraphs in Title I and Title II. It also for the first time uses the word "private" as applied to local agencies "concerned with child health, education, child-welfare and related subjects."

Page 27, line 16: Title IV—Administration:

Several constituent parts of this title have already been discussed, especially the one relating to failure of administration of a State plan to "comply substantially with *any* provision *required* by section 103, or section 203, or section 303."

Page 28, line 24:

This authorizes appropriations to enable the Children's Bureau to train "personnel for Federal, State, and local service" as previously pointed out.

Page 29, line 7, et seq. Title V—General Provisions:

Section 501 directs that: "The Chief of the Children's Bureau, with the approval of the Secretary of Labor, *shall make and publish such rules and regulations* as may be necessary to the efficient administration of this Act."

It would seem fitting to permit this title just quoted, which appears on the last page of S. 1318, to close this discussion of the bill as it reveals so clearly, honestly and without guile, *who* will make and publish the rules and regulations of an Act, which, if adopted by the Congress, has the potentiality of wreaking destruction upon the teaching and practice of obstetrics and pediatrics, and the possible alienation from the practice of medicine of their adherents, with consequent evil influence upon the welfare of the mothers and children of our country.

CONCLUSIONS

1. S. 1318, as introduced by Senator Pepper and as at present written, merits the unanimous disapproval of the medical profession, the members of which, obviously, will be commandeered to become the purveyors of medical care to all who will "embrace the benefits of the program." Those physicians who do not choose to participate will be left to their own resources to survive or perish in competition with government practice fortified with the bait of free service dangled before the consumer in the form of a Government dole.

2. The bill contains no definition of "physician," "practitioner," or "others," which implies that the high quality of medical care promised in the measure may be entrusted to cultists, quacks and charlatans, to the extreme detriment of its beneficiaries.

3. The bill, which in its initial appropriations mentions mere millions, will ultimately necessitate the expenditure of an amount in billions, as any fair-minded statistician may prove, thus adding to the burden of excessive taxation to be borne by the citizens of this country already groaning under the weight of a national debt of 262 billions of dollars.

4. The revolutionary changes in the practice of obstetrics and pediatrics will work actual detriment to the interests of mothers and children and thereby defeat the very purposes which this legislation purports to accomplish.

5. The centralized Federal control deprives the States of their constitutional prerogatives assured them by the founding fathers in the conduct of their own affairs.

6. The statistics of the draft, by twisting and distortion, have been used by propagandists to prove that the young of our nation under inadequate medical care grew up into

a band of weaklings. The realities are that the nation put into the field an army of 12 million men and women whose physical fitness was such as to win the greatest war in history, wherein our G.I. appeared rather in the role of superman than that of a physical wreck, to say nothing of the vastly greater army of those in production who were physically fit and able to contribute the sinews of war which led to victory.

7. Both the Wagner and Pepper bills defeat the very purposes for which they were evidently created, the bringing of relief in the form of adequate medical care to the indigent and medically indigent, as they both involve taking away of funds by excessive taxation from those least able to pay and contributing free doles to millions of persons financially in a position neither to ask nor to receive charity.

Within these bills is encompassed a Scriptural injunction long puzzling to the writer since his Sunday school days, but now made crystal clear through its interpretation by such legislation, namely, "To him that hath shall be given and from him that hath not, shall be taken away, even that which he hath!"

8. The Academy may register its approval of the enactment of the Pepper bill in its entirety, or, may express its disapproval of the proposed statute as now written.

9. The Maternal and Child Welfare Act of 1945, if it be the wish of the Academy, may be endorsed as one of the objectives of which it wholly approves, but with reservations concerning the question of economic need of its beneficiaries, the artificial age limit of childhood as fixed by the bill, the lack of authority and method of appointment of advisory committees, the proposed allocation to a Bureau in the Department of Labor of authority to develop and direct such an extensive medical care program (Butler Report, Children's Bureau, November, 1945), and in respect to other features not in accordance with the principles and beliefs of the membership of this body.

Such an endorsement on the part of the Academy would be in keeping with its expressed opinions relating to the first National Health Act of 1939, as evidenced by the following resolution adopted in annual meeting after a consideration of that proposed Act:

> *Resolved*, 1. That the American Academy of Pediatrics approves in principle the objectives of the National Health Act as it relates to children, but recommends that the Senate Committee on Education and Labor give further detailed study to its provisions, *with the counsel and advice of practicing physicians* and professional organizations who together will form the instrumentalities through which the success or failure of the Act will be determined.
>
> 2. That the American Academy of Pediatrics, regarding the provisions for maternal and child welfare, favors the use of public funds to provide such services *to those groups of the population unable to pay for medical services*, to the end that the standards of medical care may be maintained at a high level among such groups.

10. At the Annual Meeting of the Academy held in St. Louis, November, 1944, this body unanimously authorized the formation of a committee on postwar planning which, with the aid of the Children's Bureau and the United States Public Health Service, was empowered to conduct and is now engaged in conducting a study of the needs of children in every State and locality, with the end in view of meeting these needs, not by revolutionary Federal fiat based upon assembly-line methods, but by orderly, democratic processes to be evolved after the completion of this study and survey. As to how these aims may be accomplished without trespass upon the civil liberties of the American people, the Academy has expressed the following opinion:

> "The financing of such extension of medical services for children cannot be reduced to any one simple formula. It may be provided for by direct payment to the physician by or for the individual receiving the services, by the extension of voluntary insurance plans on a local level, by compulsory insurance plans (extension of social security), by direct taxation on a local or State level, by Federal grants-

in-aid from tax funds as a joint responsibility of local, State, and Federal government. The determining factor should be the situation existing at the local level and undoubtedly a combination of the various methods of financing may be needed in many places."

In conclusion, it may be thought by some that the content of this report smacks of belligerency, but we would point out that the nature of these legislative acts engenders a spirit of antagonism among those who have at heart the interests of pediatrics.

We regret, more than we can express, the necessity for recording certain severe criticisms of the acts of co-workers in behalf of the welfare of children to whom must be accorded a sincerity of purpose and an honesty of conviction no less earnest than our own.

We of the Academy should like to be taken into the confidence of proponents of new legislation affecting our interests and prerogatives and which would also command our good offices in order to guarantee the success of any future child welfare planning, a function with which we are now intimately and officially concerned.

The Fellowship of the Academy must have, and now is provided with, the opportunity to express its views concerning pending legislation, not only for the guidance of those who officially represent it and must speak in its behalf during interim periods, but also for the equally to be desired guidance of those who would frame and enact legislation in the interest of children.

JOSEPH S. WALL, Chairman.

THE CHAIR.—You have heard this excellent report of this Committee on Pending and Proposed Legislation on Child Health. It is now open to discussion.

DR. ALLAN M. BUTLER, BOSTON, MASS.—Dr. Wall's description of the Pepper bill in which he has given free play to his imagination and presented his personal reactions to the bill was well done as is almost everything Dr. Wall does. He has effectively utilized the technique of humor, ridicule, and insinuation in a manner which I think would almost make Dr. Morris Fishbein jealous. I think it is to be regretted that Dr. Wall did not have the time to outline the good as well as the bad in the Pepper bill. Rarely, as remarked by Dr. Sinai, is something all white or all black. I am sure that Dr. Wall does not think the Pepper bill all black. Perhaps his limitation in time prevented him from a more searching analysis of the Pepper bill. This is unfortunate, in that his description of the bill has hardly presented the Society with an objective description which will help the Academy objectively consider the bill at this meeting.

And yet at this meeting it is essential that the Academy objectively consider this proposed legislation. For there are two things, it seems to me, which this Academy cannot afford to do, because of its responsibility in educating pediatricians and in defending the quality of pediatric medical care. One is in a blanket manner to condemn the Pepper bill without presenting to the public the specific reasons for so doing. The other is that the Academy cannot afford to dodge the issue of a frank and critical discussion of the Pepper bill.

I had hoped in the course of this meeting merely to present thirteen concrete reasons why the Academy should not approve of the Pepper bill as it is now written. But before doing so it seems to me almost essential that someone in a very brief manner correct some misconceptions and outline the opportunity for good that might come out of a proper modification of the Pepper bill. First, I was a little disappointed at Dr. Wall's suggestion that the Advisory Committee should not have members representing the public, for after all, is not this medical care in terms of financing and use, the public's medical care? Dr. Wall also uses the phrase "free medicine." Today we have free medicine for those people who cannot afford to pay for medical care. It has to be free to such people. It is not only free to such people, but we physicians give it freely without remuneration. In the Pepper bill, properly modified as a basis of reasonable legislation to cover the need of the people who cannot afford to pay for their medical care, there probably will be no more free medicine in the terms of the recipients than exists today. The medicine given recipients will be given by physicians not freely but with adequate remuneration of the physicians. I do not know how many

people in this room have stopped to think of the increasing burden that charity is placing on the physician. Those of us who spend the major part of our time in institutions see the increasing burden that charity is placing upon the people whom we are asked to serve.

In a sense the Pepper bill is almost like the Federal Reserve Act. If properly modified, and we should be able to see that it is properly modified, it makes the resources of the national government available to cover the costs of illness to such of the population as we think it ought to be made available. In doing so it has to set up certain rules and regulations to protect the public in the utilization of public funds. In this respect it is like the Federal Reserve Act. In itself there is nothing in the Pepper bill that need change the manner in which any individual physician or groups of physicians or institutions render medical care. It is definitely concerned with the collection and distribution of the costs of medical care and the problem of remunerating the physician. There is nothing in it that in itself is inimical to the doctor's individual freedom in rendering professional service. The Academy because of its prestige in maternal and child care can certainly see to it that the practice of physicians is not unduly infringed upon by such legislation.

I would like now to present the thirteen reasons why I think the Academy should not endorse the Pepper bill as now written. I have put them in the form of a resolution, so that the Academy, if it sees fit, may conveniently take action concerning them. [Published in this issue of the JOURNAL, p. 390.]

Two explanatory remarks seem pertinent. First, there are two very important reasons why fee-for-service should not be excluded. Dr. Sinai has mentioned one; namely, that under the American system of general practice some doctors do both general practice and specialist or consultant practice. In paying such doctors on a capitation basis, definition of what will be included under capitation payment and what will be included under specialist payment presents a difficult problem. The second reason is that under such a plan a great many physicians, perhaps the majority, will not be seeing under the provisions of the bill enough patients to give actuarial coverage of varying incidence of illness. Therefore, you have no right to ask physicians to accept a method that denies a reasonable distribution of the risk when seeing so small a group of patients. The second explanatory remark pertains to supplemental charges. Stipulation that no supplemental payments can be made is important, if we as physicians are going to be able to insist that adequate remuneration be provided under such legislation. As soon as you may make provision under such legislation that doctors or hospitals can demand supplemental payments you are almost invariably bound to establish lower rates of remuneration than if no supplemental payments can be made.

DR. PARK J. WHITE, ST. LOUIS, MO.—At one of the meetings yesterday, criticisms of health agencies were made. It was apparent that with the depression which is going to come—and this country has not hit the low levels of the countries of Europe—we can see a need for Federal funds. It we are going to accept Federal funds, whether for school health programs, programs for contact infections or other activities, we can also see a need, as indicated in the survey, for trained personnel. This the government, particularly in the Children's Bureau and the Public Health Service, has available. To condemn government participation out of hand is not the intention, I believe, of Dr. Wall or of any of the rest of this group.

With regard to the definition of childhood, we have seen that the draft was open to "men over seventeen," and now we hear of "children under twenty-one." With the government as with the rest of us, a good deal depends on what we actually want.

Changes are coming and they are coming by way of insurance system not necessarily by compulsory legislation. I believe as a result of the survey which is about to be undertaken, we shall see the next move is one which will bring about certain changes in medical practice. Also this group and others will show those who are bringing in new methods that they will have to include in their deliberations the advice of the doctors themselves.

DR. R. L. J. KENNEDY, ROCHESTER, MINN.—My discussion of the report of the Legislative Committee is based upon a summary of opinion regarding S. 1318 as expressed in replies to letters to the members of the Academy in Minnesota asking for their opinions.

Replies were received from nearly half of the members in the State. No opposition was expressed to the broad objectives of the bill although one or two expressed the feeling that the bill should be killed, without making any specific mention of its alleged purpose.

The concept that the government, be it State or Federal, must assume responsibility for furnishing complete health and medical services to all pregnant mothers and to all children regardless of the economic status of husbands and fathers is obviously not shared by any of the members from whom written replies were received. On the other hand, a plan which does not provide for assumption by the government of financial responsibility of those able to pay their pay and at the same time provides for high-class medical care for those unable to supply themselves with it, would receive favorable consideration. It was suggested that any plan should recognize the necessity of both private and public health services as we now have private and public schools.

Control of any plan which may be adopted should be bested in the several states rather than in a federal agency according to those who commented on this aspect of the bill.

One member expressed the view that "it is not possible to practice good medicine, or honest medicine, under government control; that the practice of medicine and especially of pediatrics requires not merely skill but great patients and self-sacrifice and that these virtues will be killed by government medicine."

These represent, very briefly, the objections, both moderate and extreme, to the principles involved and to provisions of the bill as expressed by members from Minnesota. Time does not permit mention of many criticisms of specific provisions which were offered.

Since doctors are not accustomed to formulate legislation, it is not surprising that few suggestions were received which can be designated as constructive criticism. One member offered the suggestion that, "the Chief of the Children's Bureau be made responsible to a board consisting of state health officers, members of the medical profession, chiefly pediatricians, and lay members. The proportion of one-third each would be satisfactory." Another suggests that "services be limited to those whose financial status is such as to render it impossible for them to pay or to whom meeting a large expense would bring undue hardship." One states that "many more people could provide the services of a physician himself on a personal basis if other costs were defrayed."

What can be offered which will be helpful in attaining the goal which we all seek? Following suggestions which have come from some of our state members, it would seem right and proper (1) to forward with all expedience the work of the Committee of Nine, and (2) to seek modifications of S. 1318 which will be based upon the findings of this committee, which will take cognizance of the opinions of a majority of members of the Academy as expressed here and elsewhere and which will conform so far as possible with the ideas of those who must be greatly concerned with the administration of any plan, the American Medical Association, the Association of State and Territorial Health Officers, and then place behind it the full weight of the Academy in support of its passage.

DR. STANLEY H. NICHOLS, Asbury Park, N. J.—May I respectfully disagree with Dr. Park White that the point is whether or not we will approve the setting up of a Federal health program for the population. As far as this Academy is concerned, it seems to me that the thing in our minds which is most important in the national picture is whether or not we set up a *means* test, whether in pediatrics or anywhere else; in other words, are we prepared as an Academy or as a medical profession to start medical service for all at public expense? I think there are two common grounds with which we can begin. The Committee on Cooperation with Government and Medical Agencies proposed a national program, calling for cooperation between the American Academy of Pediatrics and the American Medical Association, the United States Public Health Service, and the Children's Bureau. This program is ready whenever the Academy wishes to use it.

One of the great men of this country, Eric Johnston, president of the United States Chamber of Commerce, is a very wise man who has spent his life adjusting difficulties. He says this, which we can take to heart: "When two groups disagree and cannot find a common ground, we should make a survey around the table until we find a common ground and then resume negotiations."

Dr. Park has laid before you the "Maryland State Plan" which provides that (1) the medical profession of Maryland, dentists, nurses, hospitals, (2) industry, labor, farmers, and (3) public agencies get together and provide care of the indigent and medically indigent, which is a very logical program, we admit, for the low income group, and no saner proposal for cooperation has come to my notice. I would suggest that at the business meeting tomorrow the American Academy of Pediatrics approve the Maryland Plan.

Secondly, I called to Dr. Park's attention last night, and Dr. Sinai referred to it today, that a national insurance plan has been passed by the American Medical Association at its meeting in December. Dr. Brunk of Michigan and Mr. Mannix, who is the national president of the Blue Cross, offered a second plan, namely, "to have a national health congress made up of these same components as in the Maryland State Plan." The House of Delegates of the American Medical Association directed the Council on Medical Service and Public Relations to set up a "National Health Congress" composed of representatives of the American Medical Association, the American Dental Association, the American Hospital Association, pharmacists, nurses, etc. If that "National Conference" can be brought into being it will be a great step forward by the American Medical Association. I recommend that first we endorse the state plan of Maryland and that we help participate in a national health congress and that we endorse the idea that "those that cannot pay for medical services," be so provided for. That is the common ground on which the American Academy of Pediatrics, the American Medical Association, and all concerned can participate. I recommend it as a basis for discussion tomorrow for this group.

DR. H. KENT TENNEY, JR., MADISON, WIS.—I believe I am safe in saying that my remarks represent, with fair accuracy, the opinions of most of the pediatricians in Wisconsin as well as of those individuals charged with the responsibility of administering existing child health programs.

We, in Wisconsin, believe that there are certain aspects of medical practice where individual physicians, local agencies, State agencies, and Federal agencies can and should pool their efforts. And we believe that such pooling of efforts can result in definite benefit to all concerned. But it is our unalterable contention that the policies and practices that govern the activities of these agencies should be determined locally. We feel that, in spite of fairly frequent visits to the State by representatives of Federal bureaus, we still know our conditions and our problems better than anyone remote from the scene can ever know them. And it is this complete and utter abrogation of state and local rights which it calls for that makes bill S.1318 or any reasonable facsimile thereof so very unpalatable to us in Wisconsin. When one considers the endless overlapping and duplication of existing programs that this bill provides for it is no wonder that many of our administrators view it with alarm.

While it is true that many of us believe that under the provisions of this bill the practice of pediatrics as we have known it will be considerably altered, I would like to emphasize that our opposition to the bill does not stem from a fear of losing our practice but rather from a conviction that the bill will lead to so much confusion and resentment as to hamper seriously maternal and child health activities. We do not, for a minute, contend that our programs are perfect. On the contrary, they need considerable amplification and we are developing plans for that purpose. But that to place such complete control over the practice of medicine, down to the "smallest political unit" of every state, in the hands of the Chief of one bureau is the way to improve our services is what we emphatically do not believe. And, while our relationship with the Children's Bureau has on the whole been a cordial one, the memory of some past experiences in trying—and sometimes unsuccessfully—to fight off some "do this or get no money" directives leaves us anything but happy over the prospects of what could take place under the provisions of bill S. 1318.

It has been said that this bill put the health of children in the same category as their education. Now this ideal of making health available to all children is one with which nobody has any quarrel. But, our system of public education and the provisions of bill S. 1318 are so diametrically opposed as to make any such comparison entirely untenable. Every school district elects its own school board which decides its own policies with a minimum of participa-

tion by even the state officials. But bill S. 1318 would completely reverse this system and require the Chief of the Children's Bureau to formulate all rules, and regulations for the medical, dental, "and related services" of every political unit of every state. And, may I repeat, it is this feature of the bill, this complete abrogation of State and local participation in the formulation of policies, that forms the basis for much of our opposition and convinces us that our Child Health Programs would suffer rather than benefit by its enactment.

If the Congress would allot to the State Board of Health, or other responsible agency, its share of the proposed appropriation, and require that body to be guided by a committee representing medical, dental, hospital and lay groups, then it would be possible to develop plans, tailored to fit local conditions, and free from the administrative strings that are always attached to Federal funds. Only in the case of bill S. 1318 the strings have grown to be more like rubber bands that will snap your money out of your hands if you do not watch out.

Lest anyone should consider that Wisconsin occupies a position that is mainly obstructionist in nature, I would like to say a few words about our plans for improving maternal and child health in our state.

We believe that it is little short of suicidal for organized medicine to sit on its haunches and howl about proposed plans without proposing some positive plans of its own. In line with that belief, then, the State Medical Society's Committee on Maternal and Child Health has drawn up some plans which we think will serve as a workable starting point. The thesis which underlies all of our planning is that a broad and continuous system of education is fundamental in the development of any sound health program. It is not enough for medical science to develop new techniques and new knowledge of disease. These advances must be constantly available to the profession and public alike. But it is really not enough that these advances be merely available; for we must admit that all too often they must be practically stuffed down the necks of some of our professional brethren. If our educational program includes the wise and wide dissemination of sound knowledge as to what constitutes good pediatric practice, then parents will demand good and adequate care for their children and thus force the complacent physician to brush up or get brushed off. So, as one of our educational activities, we contemplate the creation, within the framework of the State Board of Health, of a full-time position as Director of Education.

It will be the duty of this Director in conjunction with the medical schools, schools of nursing, hospitals, medical societies, etc., to organize and conduct a continuous program of postgraduate education. He will also, in conjunction with such organizations as the American Legion, and the National Congress of Parents and Teachers, organize a continuous program of lay education.

It has often been said that one of our most pressing needs is an increased emphasis on pediatric teaching. With the return of Dean Middleton from Service, plans are rapidly going forward which envision a great expansion in the whole field of preventive medicine.

As other aids in our program, it is planned to double the number of public health units in the state and to enlarge greatly the staff of Public Health nurses.

To do all this it would of course be very nice to have some Federal funds. But rather than submit to the complete domination that we see sticking out of every angle of bill S. 1318 we shall try to carry on alone.

THE CHAIR.—As there is no further discussion, I will declare the session adjourned.
(The session was adjourned at 12 Noon.)

Annual Business Meeting
Jan. 18, 1946

The annual business meeting of the American Academy of Pediatrics was held in the Book-Cadillac Hotel, Detroit, Mich., on Friday, Jan. 18, 1946. The meeting was called to order by the President, Dr. Joseph S. Wall, at 10:10 A.M.

THE PRESIDENT.—The first order of business is the conferring of Pediatric Awards. Dr. Joseph H. Stokes, a member of the Committee, will make the award on behalf of the Academy.

DR. STOKES.—After arriving in Detroit I received a letter from Dr. Graham Ross saying that he would be unable to be present and asking me to act as chairman. Unfortunately the Mead Johnson Award, which is for outstanding achievement in the past ten years and consists of one prize of $1,000 and a second prize of $500, is not to be awarded this year. Dr. Ross requested that I read the report he drew up.

Report of Committee on Mead Johnson Awards

The Committee appointed by the American Academy of Pediatrics on Awards recommended that for this year no award should be made.

The reason for this decision is that it is generally felt that there has been no work of sufficiently outstanding merit published by those who would qualify for the award.

It has, therefore, been decided that it would be better to postpone the award for this year, in order to maintain the standards of investigative work which have been shown by the previous recipients.

S. GRAHAM ROSS, Chairman.

Report of Committee on Borden Award

The Borden Award is a yearly award of $1,000, together with an appropriate medal, for that pediatrician of any age who, in the opinion of the Committee on Awards, acting for the Academy, has performed work of outstanding merit in research in nutrition of infants and children. This is the second year that such an award has been made.

In contrast to the prolonged discussion and the difficulty of decision in the case of the now postponed Mead Johnson Awards, in which an age limit has been designated by the donor, the Committee's decision in respect to the Borden Award was prompt and unanimous.

Of men in the field of research in medicine there are a few, a very few, who, by great skill, untiring effort, and well-controlled but far-sighted imagination in their chosen field of investigation have erected milestones in medical progress which will stand forever. The recipient of this year's award has pursued his chosen field of rickets in this manner, and with the work of years has erected such a milestone. He once facetiously termed the field of rickets his particular saloon in which he spent a large portion of his time in quiet retirement. It may be added that this saloon contains a few choice spirits, and one may always expect a kindly and gracious welcome.

Of equal importance in the field of research has been his exceptional facility for stimulating and fostering the spirit of investigation in young physicians, not alone in his own school of medicine, but of those young men and women with whom he has had contact throughout all fields of medicine.

On behalf of the Chairman of the Committee of Awards, Dr. S. Graham Ross, and in the name of the American Academy of Pediatrics, I present the Borden Award to a great teacher and investigator, who has earned the affectionate regard and esteem of all who have known him, Dr. Edwards A. Park.

JOSEPH STOKES, JR.

DR. PARK.—When this kind and very pleasant thing happens to a person it causes him to look back on himself. I think it is a very dangerous thing to look back on one's self and Dr. Howell, the late Professor of Physiology at Baltimore, once told me it was so painful to him that he never did it. When I look back on myself in regard to the investigations which I have done, particularly the investigations on rickets, I am aware that nothing I have ever done to rickets has been of first merit. I can mention on my fingers the great achievements in rickets, the discovery that rickets was a vitamin deficiency disease, the discovery that ultraviolet light was curative of rickets, and the discovery of a new vitamin, vitamin D, and the fact that the fetus could be irradiated with ultraviolet light, the great contribution of the late Dr. Hess and Dr. Steinbach, and the discovery that rickets as ordinarily encountered was a low phosphorous disease, a discovery that was made by Dr. Howland, Dr. Kramer, and coincidentally by Dr. Lynch. I might go on mentioning other milestones. My part has been very small. I was concerned with the work I did in collaboration with Dr. McCollum,

and Dr. Shipley pointed the way that phosphorus was very intimately associated with rickets. Recently it was thought that rickets was due to calcium deficiency. I remember a very amazing anecdote of Dr. Leonard Finley who was visiting Dr. Howland. They entered into an argument one evening at dinner as to whether rickets was produced by calcium deficiency or phosphorous deficiency. Dr. Finley contended it was calcium; Dr. Howland, phosphorus. Those of you who know Dr. Finley know that he is a very persistent Scot. Dr. Howland told me his one thought was how to get him to bed. He finally stood up and said, "What can I do for you?" Dr. Finley relpied, "I would like another cigar." I think probably Dr. Howland was right in the discussion, although Dr. Finley knew that he was.

I accept this award with all humility, feeling that it really is an expression of appreciation of effort, and that effort in right directions, that is, the appreciation of the value of countless little things.

THE PRESIDENT.—The next order of business is the consideration of applications.

THE SECRETARY.—The following lists of applicants have been approved by the Executive Board. [Published in this issue of the JOURNAL, p. 347.]

I move that the action of the Executive Board be approved on these applicants.

(The motion was seconded and carried.)

THE PRESIDENT.—The next order of business is the request for emeritus membership.

William N. Bradley, Philadelphia, Pa.
Guy I. Bliss, Long Beach, Calif.
Howard C. Carpenter, Philadelphia, Pa.
James Dunn, Davenport, Iowa

I move that the action of the Executive Board be approved and that these gentlemen be granted Emeritus Fellowship.

(The motion was seconded and carried.)

THE PRESIDENT.—The Executive Board also elected to Honorary Membership, Dr. Donald Paterson of London, England, and to Associate Membership, Dr. Franklin Henry Top, Detroit, Mich.

(It was moved, seconded, and carried that the action of the Executive Board be approved.)

The next order of business is the reading of the President's address. [Published in this issue of the JOURNAL, p. 249.]

THE PRESIDENT.—The next order of business is the report of the Secretary and the report of the Treasurer. [Published in the February issue of the JOURNAL, pp. 217 and 221.]

THE PRESIDENT.—The next order of business is an obituary for Dr. Cooley by Dr. Henry Helmholz.

THE PRESIDENT.—The next order of business is the report of the Regions. [Published in February issue of the JOURNAL, p. 218.]

The next order of business is the confirmation of the action of the Executive Committee concerning the report of the Committee on Fetus and Newborn. [Published in the February issue of the JOURNAL, p. 224.]

THE SECRETARY.—In the report two questions were asked, one by Dr. D. Lesesne Smith concerning change of State laws in regard to eye prophylaxis with a view to the use of penicillin in place of silver nitrate. The other by Dr. Jerome Glaser, concerning the definition of the newborn period. The Secretary was instructed by the Executive Board to write the Chairman of the Committee asking that it continue its investigations concerning the use of penicillin in place of silver nitrate and report at a future meeting. In answer to Dr. Glaser, the Committee on Fetus and Newborn recommends:

1. That the term "neonatal" rather than "newborn" be used to cover the period after birth that Dr. Glaser asks us to define.

2. That, for the sake of uniformity, the first month (first 30 days) should limit the neonatal period. This may be regarded as an official definition since it has been agreed upon by the Children's Bureau, the American Public Health Association, and the Bureau of Census (the Registrar, Bureau of the Census, U. S. Department of Commerce, Vol. 4, No. 2, February 15, 1939).

I move that the action of the Executive Board be approved.

(The motion was seconded and carried.)

THE PRESIDENT.—The next order of business is the report of the Committee on Redistricting the Academy. [Published in this issue of the JOURNAL, p. 352.]

DR. MARTMER.—For the last few years it has been evident to the Executive Board that representation on the Executive Board was becoming a one-sided affair. That was true because of the manner in which the Academy was divided at the time of organization. At the time it was organized the natural division was eastern, southern, middle western, and far western states. As time went on with the tremendous increase that has occurred in the membership of the Academy, as I have already noted, the representation became equally distributed. For that reason the President, on the recommendation of the Executive Board, appointed a committee consisting of Dr. Goehle and myself and we were to submit plans for making as nearly equal representation of the Academy as possible. Probably all of you have all seen copies of the report of the Committee. The recommendations of the Committee are as follows:

1. That the Executive Board submit to the membership the proposal that the Academy redistrict Regions I, II, III, and IV into eight (8) districts based upon an equal number of members in each district.

2. That the districts be represented by a district or Regional Chairman with all the duties and responsibility now held by a Regional Chairman.

3. That nominations and election of such Regional Chairmen be done in the manner now prescribed in the Constitution.

4. That the term of office of a District Chairman be for a period of eight (8) years.

5. That the Executive Board be empowered to make all necessary changes in the By-Laws of the American Academy of Pediatrics to accomplish the redistricting as proposed in this report.

We have a slide to show the proposed redistricting of regions by actual numbers. Whereas Region I, which constitutes the New England states, New York, and as far down as Washington, at the present time has 725 members, Region II comprising what is commonly known as the southern states has 326 members, Region III, the middle western states has 468 members, and then going out to the extreme western states, and this divided by the Rocky Mountains, we have a total of 209 members. Under the process of redistricting, District 1 would have 188; District 2, 210; District 3, 198; District 4, 198; District 5, 226; District 6, 221; District 7, 236; District 8, 212. District 9, which is at the present time Region V, consisting of the Latin-American countries, will continue as it is and there will be no change in the components of the District, it will simply be a change in name. As time progresses and if and when the membership in the Latin-American countries increases, then further subdivisions of that District may be undertaken.

At the time the Academy was organized it was felt that much of the work of the Academy would be carried on through the Regions, that is, the regional meetings would provide a common meeting place for those states in this particular area at which problems peculiar to the area would be considered. That stage in development has apparently pretty well passed. Much of the work that was formerly regional in nature has become national in scope. Some of the work which in the formative period was on a regional basis is now being carried on on a state basis. The function of the Region as such was perhaps diminished as the Academy itself has moved forward. At the present time the Regions still have a function in that they have, prior to the onset of hostilities, formed a means of providing a clinical meeting for those individual members who were not always able to attend the national meeting, primarily because of its place of meeting. In other words, if the

meeting were held in the far east it would be difficult for the membership on the extreme west coast to attend, and so there was the feeling that they wanted a clinical meeting at least once a year and the regional meeting served that purpose. There was one very great difficulty in at least two of the Regions, that was the question of finances. Whereas, Regions I and III could provide clinical meetings that were self-sustaining and self-supporting, Regions II and IV were under considerable hardship in that respect. If this proposed redistricting is carried out, it is the thought of the Executive Board that while the annual meeting will continue to be held in the fall and the location will continue as in the past to be in various parts of the country so that from time to time it will be in cities accessible to the membership and not in one particular place, that if the meeting were held in the extreme east, a clinical meeting in the spring of the year would be held at a point which would be accessible to those members who because of the great distance involved and traveling to the annual meeting in the fall, would not be able to attend the meeting unless additional meetings were held. It might be necessary to hold two additional meetings, such meetings to be put on through the efforts of the Secretary as are the annual meetings, which because of their nature are much more likely to have a larger attendance and may be actually self-supporting. It means greater effort and more work on the part of the Secretary and his Staff, but as the Academy grows it is natural that such labors should increase.

The redistricting is proposed and it is the desire of the Executive Board that it be very thoroughly studied and considered, and on the basis of such consideration that it be voted upon at the next annual meeting. Is there any question about it?

DR. BORDEN VEEDER.—I think it is a very good idea. One thing I would like to have thought given to, that is, the proposed Executive Board. Is one new man to go every eight years? I would like to express the thought that it might be wise to have the term of office for four years with two members elected every year, with the privilege of re-election. I am not making a motion.

DR. ALLAN BUTLER.—As one goes through the minutes of the Academy one is impressed with the fact that we should lower the age limit of members who are acting on committees. I think the younger members have a definite feeling that they are not allowed to participate in committee discussions which concern a great deal the policies of the Academy. For instance, the Committee on Legislation is composed of very wise individuals but there is not a member on the committee who is under 60. Therefore, those members are determining the legislative policies of the Academy which will not affect those individuals but will affect the members thirty years younger. I would like to see more young men on the policy-forming groups of the Academy.

DR. HELMHOLZ.—I came to the same conclusion as Dr. Veeder did and I had the privilege of discussing this with the Chairman of the Committee. He seems favorably inclined and if he wishes to have some action on this which may help, I shall be glad to make a motion.

THE SECRETARY.—The question of membership on a committee is one that depends on activity and not on age. We have continually tried to find younger men who would do the job. That has been going on for five or six years. If those who wish to have younger men will give suggestions we will meet those suggestions with an open mind and an open heart. It is difficult to find younger men who will do the job. The older men have been tried and we know what they will do. We would like to have younger men. There has been a continual change in the Executive Board along that line. I think the whole tendency in the Board has been to discover younger men who will do the work. The fact is we have to get the work done. If we can get younger men to do it, we are willing to put them on.

DR. VEEDER.—I move that a change be made in the Executive Board in the redistricting program, that the members serve for four years, two members to be elected each year.

(The motion was seconded by Dr. Garrison.)

THE PRESIDENT.—As I understand it, the members of the Executive Board should be elected for four years rather than as they are now.

DR. VEEDER.—It states in the report that they will be elected for eight years.

THE SECRETARY.—Would you like to add the privilege of re-election once? We do not have anyone on the Executive Board for longer than eight years. You could say with the privilege of one re-election.

DR. VEEDER.—I accept that.

DR. FRANK VAN SCHOICK, JACKSON, MICH.—The proposal is for nine districts. It would seem easier if members of the Executive Board were elected for three years.

THE PRESIDENT.—This proposal must go over one year. These amendments must be submitted to the Executive Board and then brought before the members at the November meeting. Any motion will be to suggest for the consideration of the Committee that two district chairmen will be elected for a term of four years. Dr. Van Schoick suggests three years.

DR. MARTMER.—There is only this to be said. There has been more and more a feeling on the part of Region V that they want to be considered exactly as the other regions, and it might be well from the standpoint of policy to treat all regions on exactly the same basis. With nine members of the Executive Board and a three-year tenure of office, it would provide a stable Board.

DR. VEEDER.—That will be satisfactory.

THE PRESIDENT.—Do you accept nine members for a three-year term and re-election for one term if the District desires?

THE SECRETARY.—Three members would go off each year and their successors would be appointed for terms of three years, with the privilege of reappointment at the end of that time for one year.

THE PRESIDENT.—You have heard the motion that for the consideration of the Committee, it is suggested that district chairmen be appointed for a three-year term each, with the privilege of reappointment for a term of the same length. (The motion was carried.)

I wish you would think about Dr. Martmer's proposal on redistricting.

DR. HARMON TREMAINE, BOISE, IDAHO.—I would like to say a word for those of us who live in the West. When a man from Denver goes to Seattle he travels 1,600 miles by rail. I would, from a selfish standpoint, rather be left in the midwest district.

THE SECRETARY.—These districts are only administrative districts. They are not the districts which hold meetings. The old method of holding meetings will be discontinued and all meetings will be from the central office. There will be two or three meetings a year. That is a point which must be remembered. There is no intention whatever of using this redistricting as anything but as administrative policy, and the future meetings will be determined by the location of the annual meeting. Then we will have other meetings in the sections of the country which are not in definite connection with the annual meeting. That is what it calls for.

DR. EUGENE B. SCHUSTER, PITTSBURGH.—If redistricting is for the purpose of administration and the districts do not hold meetings, and out of the administrative divisions come responsibilities, are our representatives going to take the responsibilities? How are the representatives going to be chosen?

THE SECRETARY.—Heretofore it has been the custom of the Executive Board to ask the regional chairmen for the recommendation of two from each district so that they can take their choice for associate chairman. The regional chairman has been elected on the recommendation of the Nominating Committee of the Academy and the associate chairman usually is selected from two names that are presented by the regional chairman after consultation with the state chairmen in his region and the vote of the state chairmen. That has been the custom in the past. I suppose that in the future according to this plan the nominations will come from the Nominating Committee and unquestionably I should think would be on the recommendation of the state chairmen within any given district. I do not think that the methods have been set up.

DR. GENGENBACH.—I was going to raise the points that the states of Wyoming, Colorado and New Mexico are on the other side of the mountains. Originally Colorado was put in Region IV, but our problems are associated with the Middle West. As far as the number is concerned, there are 17 in Colorado, 1 in Wyoming, 4 in New Mexico, which would only take off 22 members from that district.

THE SECRETARY.—It is only for a matter of administration and for no other purpose. I cannot see that it makes any difference to the state what group it is in.

DR. VEEDER.—A practical point comes up, the question of the Nominating Committee. The Nominating Committee has been a committee of four, one from each region. What is the plan of handling that in the future? It was not discussed. I have served on the nominating committee a couple of times. The nominating committee has polled the state chairmen of each region for their choice as to officers and the committee has taken the selection. How are you going to handle that in the future?

THE SECRETARY.—That has not been discussed.

DR. PAUL W. BEAVEN, ROCHESTER, N. Y.—How is Canada redistricted?

DR. MARTMER.—On the basis of the plan as it has been set up, Quebec will be in District 1, Saskatchewan and Manitoba in District 6, British Columbia in District 8. Puerto Rico will be in District 4, Hawaii in District 8. Alaska will be in District 8, as soon as we have a member elected from that country.

DR. HOWARD J. MORRISON, SAVANNAH, GA.—I would move that one member of the nominating committee be from each of the nine districts. That would include a representative group from the entire Academy.

(The motion was seconded and carried.)

THE PRESIDENT.—We will now present resolutions from the Executive Board.

DR. LEE FORREST HILL.—Your Executive Board presents the following resolution adopted on Jan. 17, 1946:

> The American Academy of Pediatrics in annual session at Detroit, Michigan, January 15-18, 1946, after careful consideration of proposed legislation in Congress as it relates to child health services reaffirms its resolution as adopted at its 1939 session, namely:
>
> "That the American Academy of Pediatrics, regarding the provisions for maternal and child welfare, favors the use of public funds to provide *such services to those groups of the population unable to pay for medical services*, to the end that the standards of medical care may be maintained at a high level among such groups."
>
> The Academy of Pediatrics does not favor the use of Federal funds for those able to provide good medical care for their own resources.
>
> The Academy directs the attention of those considering proposed legislation to its fact-finding study of child health services now in progress which, at its conclusion, should assist in the development of sound programs at state levels based on demonstrated needs.
>
> Pending the completion of this study, it is recognized that urgent needs exist in some states that should be met in the immediate future. To this end the Academy recommends that additional Federal funds be made available for grants-in-aid to the states under existing Maternal and Child Health and Crippled Children's programs of Title V of the Social Security Act.
>
> The Academy would welcome the privilege of sending its representatives now or at any time to confer with those responsible for the preparation of legislation pertaining to child health.

I move the adoption by the Academy as a whole of these resolutions.

(The motion was seconded by Dr. Gengenbach.)

DR. STRINGFIELD.—I would like to call attention to the next to the last paragraph. It says, "Maternal and Child Health and Crippled Children's program of Title V of the Social Security Act." I would like to add to that "as amended in 1939."

THE PRESIDENT.—That is the usual legal wording. I am sure Dr. Hill will have no objections.

DR. STRINGFIELD.—My reason for adding that is that some members confuse the Social Security Act with the EMIC program.

DR. BUTLER.—I would like to have one point clarified and that is in regard to the publication of the various papers read and comments made yesterday morning in the session on postwar planning and medical economics. There were two papers read yesterday, one by the President and the other by Dr. Sinai. Are the remarks pertaining to the discussion to be published?

THE PRESIDENT.—The papers and reports are published in the JOURNAL. I will ask Dr. Veeder.

DR. VEEDER.—We publish all the minutes of the Academy meeting that come to us from the official stenographer. We do not consider it the function of the JOURNAL to amend what the members say at its meeting. The Secretary, Dr. Grulee, assures me, Dr. Butler, that the minutes will include all the discussions.

THE SECRETARY.—I have not talked much on this situation. I have put out only one piece of information regarding it as to my opinion. It is not because I have not felt. I feel we are at the turning point of American pediatrics. I think the situation is a very, very serious one. At the meeting in St. Louis we were assured by Dr. Eliot that there will not be any future legislation coming from the Children's Bureau based on the EMIC program. I know from Dr. Eliot that she does not consider the present Pepper bill as being the child of that EMIC program. In the point of time and purport the Pepper bill is the child of the EMIC program. In the St. Louis meeting I talked with her and Dr. Helmholz. She asked me why I was so in opposition to the EMIC program. I told her that I felt that it was the entering wedge for legislation along this line and that I would not be in favor of such legislation. Dr. Helmholz said he felt the same way, and that it would be unfair to the profession to do it that way. I think Dr. Helmholz, knowing him as I do, puts the same interpretation that I do and that Dr. Eliot does. To me the situation is far more serious than that. It means eventually, say what you please, that the medical men and pediatricians of this country will not run pediatrics in this country, will not take care of the child as they have in the past, that it will be done by the Children's Bureau. If the Children's Bureau were to consult the pediatricians and take the words of the practicing pediatricians as directives in their effort, I would not so feel. What has happened in the Pepper bill—I did not find this out until this meeting—I found it out because Dr. Eliot came to this Executive Board. There is in Washington a lay group in close affiliation with the Children's Bureau. I do not know the name of that Committee. That Committee had two doctors on it, Dr. Helmholz and Dr. Baumgartner. As far as I know Dr. Helmholz and Dr. Baumgartner did not consult with other pediatricians in the matter of preparation of this bill. If we are to have that type of cooperation from the Children's Bureau, I am against cooperating with the Children's Bureau in frank language. If the Children's Bureau can come clean with us and can say so and so, all right. I want to say this. I have been on the Advisory Board of the Children's Bureau for over ten years. I have never seen that anything I said that was opposed to the views of the Children's Bureau had any weight. I had to say this because I feel that I should say it so as to let you know how deeply I feel on the whole situation. It has spoiled the meeting for me. But I feel I should tell you how deeply I feel on the whole situation.

DR. HELMHOLZ.—May I make one or two slight corrections on what was said? Drs. Stevenson, Eastman, and myself were on the Executive Committee of the Commission on Postwar Care. The report of the Executive Committee was submitted to all the members of that larger group. Among those to whom it was submitted is our President. He had opportunity to have objected to anything in that communication. I do not believe there was any report from him as to objection to anything as outlined by the Committee.

DR. HILL.—Anyone who wants to discuss this resolution may do so.

Dr. BUTLER.—I would like to refer to two points. Dr. Grulee as a member of the Advisory Committee of the Children's Bureau has made a statement which suggests that the Children's Bureau has not accepted advice rendered by physicians on this Advisory Committee. As a member of the Advisory Committee and as a physician I would like to state my impression that rarely has advice been given by the individual physician member of the Advisory Committee of the Children's Bureau that that advice has not been accepted or received generous consideration.

The second point I would like to make pertains to the feeling that the Children's Bureau has not lived up to its agreement that the EMIC program would cease with the cessation of the war. Dr. Eliot in her statement before the committee concerned with postwar planning either in St. Louis or Chicago was asked specifically the question, would the EMIC program cease with the war and would the experience of the EMIC program be carried on to programs pertaining after the war. Dr. Eliot said, "I can say definitely the EMIC program will cease with the termination of the war. I, as a member of a government agency concerned with the improvement of medical care of women and children, cannot say that the experience derived from the EMIC program will not be utilized as a basis for planning for better care of women and children." I think many members of the Academy forget that Dr. Eliot's job for the government is planning for improvement in maternal and infant care. To accuse Dr. Eliot as being unfair in utilizing information derived from the EMIC program is totally unfair. I can see no justice in the statement that experience with the EMIC program is being unfairly applied in the Children's Bureau's planning for the future. I can see no fairness in the statement that Dr. Eliot has not stuck to her words.

THE SECRETARY.—I would like to answer those questions because they are questioning what I said. In one of the meetings at Washington of the Advisory Committee, every doctor and every nurse said that in the future in any planning or any action which affects the medical care of children the medical profession should be consulted. That was the action definitely taken by this group on the Advisory Board. Every doctor voted in favor of that as did every nurse at that meeting. So far as I can see, if the Children's Bureau had anything to do with the Pepper bill, the medical profession was not consulted in the formation of that bill. I may be wrong in my interpretation of what impression Dr. Eliot intended to give us at St. Louis. If I am wrong there are a great many other men who were at the meeting and who were present at the time when this was said, who gained an entirely different impression from Dr. Eliot's talk. I know Dr. Eliot made exactly the statement that Dr. Butler credited to her at the meeting of the Advisory Committee in Washington because I called up the question and asked if it would be used as a wedge in future legislation. The answer was exactly as Dr. Butler has given. I had the impression that at St. Louis she said it would not be used as an entering wedge in future legislation. There are men in this audience who told me they understood it the same way. There is always a chance for misunderstanding. I do not know that I have anything further to say on that, but I think those are the answers to Dr. Butler's objections.

DR. PARKE WHITE.—It is my impression that the committee of physicians that had most to do with the preparation of the Pepper bill is the Committee of Physicians for the Improvement of Medical Care, a remarkably fine group.

THE SECRETARY.—How many physicians were there on the committee and how were they constituted?

DR. WHITE.—There was some overlapping of membership. There are some pediatricians on it. Knowing the constituency of that committee I expected to join it myself. That does not mean any official connection between the pediatricians and the preparation of the Pepper bill. I really do not know what the doctors have had to do with that except I do know that this one committee—there may be others—is the committee of physicians for the improvement of medical care and not to be confused with the committee for the extension of medical practice. I have gone along with Dr. Butler's impression of the Pepper bill. The amount of approval or disapproval is submicroscopic.

DR. BUTLER.—As a member of the Committee of Physicians for the Improvement of Medical Care (there are in this room at least three members) I would like to correct a statement that was just made. The Committee as a committee was not consulted in the preparation of the Pepper bill. To my knowledge neither Senator Pepper nor the actual individual who wrote the bill, one of Senator Pepper's assistants, consulted the individual members of the Committee of Physicians for the Improvement of Medical Care. After the writing of the bill various members of the committee were asked to express their opinion concerning it. The Committee in making a statement concerning the Pepper bill criticized the bill very largely as to the thirteen points I mentioned yesterday in criticizing the Pepper bill. The Committee, therefore, does not approve the Pepper bill. I think there are some misunderstandings on the part of many individuals concerning the manner in which Federal legislation is introduced. The initial draft is apparently utilized by Congress as a means of discussion and as a means of obtaining information, so that two, three, four, and five drafts of the legislation can be made with continued discussion and the ultimate legislation represents the opinion derived by discussion of these various drafts presented to Congress. Congress must have done that with a certain amount of wisdom derived from experience, and I know not what that wisdom is. It is obvious if you want to get action on a matter you make progress by having something concrete to discuss, to which you can direct criticism. We have had recent experience in relation to several bills before Congress establishing the National Science Foundation. Unless several drafts of proposed legislation had been written and proposed, some kind of concrete information could not have been obtained from Senate hearings held pertaining to such legislation. I am sure it would have been very difficult to obtain legislation which might be translated into concrete proposals to be submitted to the entire Congress unless an initial draft was presented for discussion. The Pepper bill is the initial draft. The Pepper bill will not be considered by any committee in Congress unless many groups have been asked to express their opinion. The Pepper bill will not get to the floor of Congress until medical men and pediatricians are given an opportunity to express their opinions. Therefore, I do not think we should get too excited over the feeling that someone has presented an original draft that is to be the basis for discussion.

DR. VEEDER.—I had not intended to speak on this but I want to stand by Dr. Butler in his statement that the Committee for Improvement of Medical Care had nothing to do with this. A statement is being prepared showing disadvantages of the Pepper bill. I thing we are making a little mistake. First of all, the thing we are interested in is better medical care for children. That is the primary thing. There has been a bill introduced in Congress to provide medical care on a basis that we do not believe will provide better medical care for children. I think we have every right to object to it. I think it is a waste of time to sit here and discuss the Children's Bureau. What we have to do is to discuss what is in this bill. If we take simply the negative attitude toward the matter we will not get anywhere. We have no right to go as individuals or as the Academy or as Academy representatives before a committee in Congress and simply say, as was the experience of the A. M. A., "We object to this." We have to have reasons why we object, and much more, we have to have definite recommendations as to what should be included in any bill passed by Congress in legislation for children. It seems to me that that is important and the thing we should do.

DR. McQUARRIE.—So that there will be no doubt as to who the third member of the committee is, I wish to speak. I accepted a place on this committee because I do not think medical care is as good as it might be. I do not like the attitude of the A. M. A. in many things. I do not go with it in taking the stand alluded to by Dr. Veeder—we will not play ball. We will organize a society that it against everything. A society that is opposed to everything that the government does is to me ridiculous. I am not in favor of state medicine and regimentation. I am not in favor of taking this legislation as it is passed today. I am in favor of improving medical education of doctors. I think then we should improve medical care and to provide general practitioners with good scientific training. I think we as medical men in full-time positions should provide good training for our students. My chief interest is a discussion of research, avoiding anything that is destructive. I have the

impression going about this country as a guest speaker that pediatricians in private practice are doing as fine service as we would expect all members of the Academy to do. All the people we cannot take care of must be taken care of, which means care coming from taxation. That is where some national organization, the Children's Bureau or some other, must set the machinery. None of us on the committee are in favor of destroying medical practice and having a great number of practitioners working on small salaries. I hope that statement can be made.

DR. JULIUS H. HESS.—For a point of clarification as far as the stenographer's notes are concerned, Dr. McQuarrie used the term A. M. A. as a society that is opposed to everything.

Dr. McQUARRIE.—As a matter of fact I am a great admirer of the A. M. A. I worked on the Council for ten or twelve years. I am in favor of many fine things they do, but I do not favor their standing aside and objecting to everything that is done. I like what they did in one committee, the name of which I cannot recall.

DR. HESS.—That is the National Physicians' Committee.

DR. LENDON SNEDEKER, BOSTON, MASS.—As a member of the younger married set, so to speak, I am interested in this legislation from its general character. The discussion yesterday seemed to center entirely on the Pepper bill and since this was closely related to child welfare services, I wonder what the Executive Board's attitude was toward the introduction of this legislation and its specific attitude as to the Pepper bill. I thought the criticism offered by Dr. Butler yesterday was timely.

THE PRESIDENT.—In the report of the Legislative Committee three bills were concerned—the hospital bill, the Murray-Wagner-Dingell bill and the Pepper bill.

DR. RATHBURN.—I would like to ask a question, why the people who are interested in setting up legislation are not willing to extend the social security bill. I find in this resolution it states, "The Academy recommends that additional Federal funds be made available for grants-in-aid to the states under existing Maternal and Child Health and Crippled Children's programs of Title V of the Social Security Act." Why is it not possible for those who wish to do any work for children to extend the facilities and the amount of money that comes to us under the provisions of the social security bill? It seems to me the two things to object to are the lack of a means test and the unlimited amount of money that is spent by the Pepper bill. Would we not accomplish more if we could have Congress spend the amount of money extending the provisions of the present maternal and child health and crippled children's program?

THE PRESIDENT.—The Department of Labor has given thought to extending the social security program but was in favor of the Pepper bill.

DR. ROGER KENNEDY.—I presume that all that will come from this meeting today is an expression of opinion that is to represent the opinions of the majority of this group. I know very little about child psychology. I was taught if I had a child with temper tantrum, to advise the parents to walk off and let him be, that he would eventually get over the tantrum. If this meeting is to gesticulate under a show of emotion, the American Academy would be taking the part of the tantrum child, and the officers, the parents, who represent us, will walk off. I think we have to be careful unless we go off that way. In order to bring it to a head I would like to ask this question. I have been thinking since yesterday about the resolutions of Dr. Butler. I wonder if they would be unfair to the group I represent, that is, the members of the Academy in our state. I think the import of what is put forth points to an effort on our part to delay action on the bill in its present form to allow time for modifications to be considered, modifications that might be elaborated not only by our group but also by other groups. It seems to me that we might consider the points Dr. Butler offers as resolutions. They might influence modifications, which would be the best way of handling this rather than this complicated resolution which covers all resolutions.

DR. HILL.—It seems to me that if we attempt to translate the resolution into the feelings of all of us, we will be here for the next two weeks. It seems to me the thing

on which all of us on the Executive Board were agreed was that we have some thought about a means test on a state level. That, I think, springs from the Academy group, and that is the point of this resolution. If you want more resolutions after this to cover other shades of viewpoints, that is O.K. Our feeling was that here was a definite stand that a committee could or could not make. I prefer that a vote be made on this resolution.

DR. E. B. SCHUSTER, PITTSBURGH.—I would like to tie in with what Dr. Kennedy was saying. The question before the house is the recommendation made by the Committee. You can accept it or reject it. The question is, does it express the will of the majority of the Academy? I have been wishing to sit still, but I cannot quite do so, because I think what is presented in the resolution is nebulous and not creative. It does not tell the people who are going to plan legislation anything about what we think ought to be done, anything detailed about what is before them. It does not do anything more than object in a very broad way without dealing with the objectives that have been brought out and that ought to be dealt with. My own opinion is that we should deal with the real issues before us which are pretty well crystallized.

THE PRESIDENT.—I call attention to the fact that one of the resolutions state that the Academy would welcome the privilege of sending its representatives now or at any time to confer with those responsible for the preparation of legislation pertaining to child health.

DR. BUTLER.—My reason for asking whether the remarks made by the speakers would be recorded was that yesterday afternoon a great many individuals came to me saying, "Those thirteen specific critical comments on the Pepper bill should be recorded." Certain people asked me if at the meeting this morning I would resubmit those criticisms. The statement which is now before us is a very good introductory statement. One could, if it seemed desirable, merely end that statement by saying, "The Academy submits the following specific criticisms of bill S. 1318, and because of these objections the Academy cannot approve, or disapprove, S. 1318." The Academy disapproves S. 1318 because of the objections given. That can be appended to what I think is a very good resolution.

DR. PARK.—May I subscribe to Dr. Butler's view. It would seem to me that that would be a wise addition.

THE PRESIDENT.—Would Dr. Butler care to introduce these thirteen criticisms?

DR. BUTLER.—I move as an amendment that there be added to the resolution as now before us a section which will present the Academy's specific criticisms of the Pepper bill as now written, and that the thirteen points mentioned yesterday be the basis of the specific criticisms but that the final form of the specific criticisms be determined by a committee to be appointed by the President with power to act.

(The motion was seconded by Dr. Veeder.)

DR. FRANK VAN SCHOICK.—I think it will occur to those present yesterday that the President treated those objections more in detail than did Dr. Butler. I would suggest that the thirteen points suggested by Dr. Butler be not the only basis for this Committee. As a matter of fact, the President had more objections and more in detail.

DR. W. L. CRAWFORD, ROCKFORD, ILL.—I think most of us have the same idea in mind. We would not be here in Detroit if we did not want to do everything we can to help child care. No one can argue with the statement that what we want is better child care. We will argue whether the Children's Bureau has not done the best they can as they see it. You may not like my work, but I have done my best. I think we will all agree that the Children's Bureau has done a very fine work. I think we should consider the passage of the resolution. The question before us is this, is the Children's Bureau going into pediatric practice and general practice? If so, should we wish to work with the Children's Bureau as was done during the war? We, in turn, should like to work with the Children's Bureau, but we should not like to work with the Children's Bureau as a competitor in the small towns and hamlets. I am taking time which is valuable because that is the viewpoint of the general practitioners. I think from my own viewpoint I would like very much to see this resolution voted upon and voted upon favorably. There

is no reason why after digesting this at our next meeting or another meeting, if we find we have been a little bit stubborn, we cannot vote differently. At present I would favor the passage of this resolution.

So much for the main resolution. I would like to make a few remarks about the papers yesterday. Dr. Wall's paper was very long, it was obviously one-sided. Dr. Butler's suggestions were very good. The Pepper bill is now in committee. I think the amendment of Dr. Butler's should be passed as an entirely separate thing and not considered a part of this resolution.

DR. ----------.—You have approximately one-sixteenth of the representation of the Academy here. I feel that the majority of the Academy feel that this resolution is what they want. In reference to the amendment, I feel the Committee should not be given power to act, because they will not have the expression of the Academy to act on. Let the special committee draw up what they want and let them send it to members of the Academy by mail and let them get a true expression. It is a tremendous piece of work, but it is the only way we can get a true impression.

THE SECRETARY.—I would like to ask if he would regard a vote as based on the total membership or on the number of votes cast for this resolution and how he would regard those who offered certain changes which undoubtedly will be offered in case a mail vote is taken. I think it is almost impossible to get anything definite out of a mail vote. I think it would very much reduce the effect of such a resolution, not because I do not want to get the reaction of the members of the Academy by a mail vote. The members will not vote yes or no, they will want to make suggestions in these resolutions. I know every man has his own ideas on the Pepper bill and why he does not like it. I do not believe a vote by mail can be carried out successfully.

DR. ----------.—I feel the most important thing before the Academy is that we have certain objections to what is in the Pepper bill and other bills. I feel the resolution carries enough weight and that the Academy is strong enough with the Children's Bureau to make its weight felt. I believe the resolution carries that point.

DR. GARRISON.—The stenographer has the points Dr. Butler made. Should we not have Dr. Butler read them? I am opposed to Dr. Butler's amendment. If Dr. Butler wants a different group to assist, I doubt that that is wise.

THE PRESIDENT.—The Chair has a copy of Dr. Butler's thirteen points.

DR. VAN SCHOICK.—I think the resolution states in general the objections. If there is a special committee appointed to go over this, we should have confidence in this committee. Therefore, I offer a substitute motion taking the place of all other motions that we accept the resolution as presented by Dr. Hill.

(The motion was seconded.)

DR. PARK.—I suggest that Dr. Butler withdraw his amendment and present it as a second motion.

THE PRESIDENT.—Dr. Butler, would you be willing to withdraw your amendment?

DR. BUTLER.—With the consent of the seconder I withdraw the amendment.

(The motion to adopt the resolution was carried.)

DR. BUTLER.—I now re-introduce my motion as read yesterday.

(The motion was seconded by Dr. Park.)

THE PRESIDENT.—I think it is only fair that we should hear the criticisms read.

> The Academy in defending the interests of pediatricians and the public cannot afford to ignore the Pepper bill or to condemn it without mentioning the specific reasons for so doing, therefore the following specific criticisms of S.1318 are offered:
>
> 1. The bill as now written states that services and facilities furnished under the state plans are to be available to all mothers and children who elect to participate in the benefits and therefore denies to the States the right to determine eligibility.

2. The bill excludes fee-for-service as a means of paying practitioners for service rendered.

3. The bill makes inadequate provision for paying groups of physicians or institutions for professional services rendered.

4. The bill does not specify that professional personnel, groups, or institutions do not accept supplemental payments. This may lead to a low scale of professional remuneration under the bill that would undermine scale of payments, etc.

5. The bill endorses the Children's Bureau as the most suitable administrative agency of this major step in a National Health Program without assuring integration of the administrative functions and health services under this bill with other health activities of the Government.

6. The bill does not satisfactorily define the Federal or State advisory committees as regards personnel, method of appointment, advisory and policy making roles or manner of giving authority to the record of consultations with and recommendations to the Administrators at Federal and State levels.

7. The bill makes no provision for variation in remuneration for service according to the differing costs pertaining in various states.

8. The bill makes no provision for the prevention of arbitrary requests on short notice by the Federal Administrative Agency for reports from the State Health Agencies and similarly arbitrary requests by the State Health Agencies for reports from those rendering services.

9. The provisions for handling claims are unsatisfactory.

10. The bill fails to specify adequately reference to coverage of dental care in appropriate portions of the bill.

11. The bill makes no adequate provision for the protection of the well-organized and integrated teaching services on which the future quality of medical care is so dependent.

12. The bill makes inadequate provision for the support and encouragement of research pertaining to the improvement of maternal and child health services and medical care.

13. The bill makes no provision for assuring that State plans be expanded at rates that do not exceed available administrative and professional personnel and resources and that assurance against too rapid expansion be considered as one of the criteria of approval of a State plan by the Federal agency.

For these reasons the American Academy of Pediatrics believes that the Maternal and Child Welfare Act of 1945 (S. 1318) does not represent the best form of legislation for the purpose for which it was written.

DR. J. M. BATY.—May I ask Dr. Butler his recommendations on the formation of a committee.

THE PRESIDENT.—That was not in the part just before us.

DR. BUTLER.—That is not necessary. Those thirteen points were read before 300 members yesterday.

THE PRESIDENT.—The Chair will rule that Dr. Butler did not include the committee, therefore it is not included in the motion.

(The motion was carried.)

THE PRESIDENT.—The Chair will recognize Dr. Van Schoick under new business.

DR. VAN SCHOICK.—In the State Chairmen's meeting the night before last, when the child study program of child health services was presented to the state chairmen, it occurred to me that there was considerable doubt in the minds of many state chairmen as to how this survey would be received when they returned home. I have had the unusual opportunity in so far as Michigan is my home, that the Council of the Michigan State Medical Society is now in session. Yesterday I spent the afternoon with several members of that Council and asked them if they would give their approval of the survey in Mich-

igan. They asked many pertinent questions and they did not approve of many of the problems. They recognized that the object of the survey was well stated. While this is not official, it comes from the Executive Council of the Michigan State Medical Society, and I can say that they have given their approval for the study in Michigan. Without the consent of each state medical society the survey will not be approved. Therefore, I think it would be of interest to you state chairmen to take this information back to your own state, that Michigan has given its approval to the study provided it participates in it and has adequate staffed groups so that the organized medical profession will have some access to the information derived. I feel that the Academy owes to the medical profession in general a leadership which we have so far only attempted. I think that the time is coming for the Academy to appoint a representative committee that brings up just this parenthetical thing that Dr. Kennedy mentioned with temper tantrums, that the fault is all the child's; I think you will recognize that the fault is not all the child's but perhaps the parents'. I draw the analogue that maybe the parents should be represented as well as the child. I therefore offer this motion: that the President appoint a committee of not less than twelve members to review the data compiled and accumulated by the Committee on the Study of Child Health Services, with instructions to bring to the membership of the Academy recommendations for a plan of action to implement the objectives of the Academy as expressed in the resolution, based upon the findings of the survey being conducted by the Committee on Study of Child Health Services.

(The motion was seconded.)

DR. BUTLER.—I happen to be a member of the Committee concerned with the Academy survey. At the committee meetings we have had several discussions concerning the ultimate utilization of the factual data obtained. Here at this session Dr. London was very anxious that the ultimate utilization of the data obtained be specified. I think I represent the opinion of the committee correctly, that it is unwise to make a commitment concerning the utilization of the factual data except in the broadest terms until the factual data has been accumulated and until it has been appraised and until it has been adequately set in motion. I think it would be unfortunate to appoint a separate committee to determine how the facts are to be utilized before we know what they are. I think it would be far wiser to instruct your present committee which is concerned with the survey to amplify for the Academy such opinions as they now have concerning the possible utilization of the facts resulting from the study.

QUESTION.—How large is the present committee?

DR. VAN SCHOICK.—The Committee consists of three from the Academy, three from the American Pediatric Society, and three from the Children's Bureau.

DR. HUBBARD.—All nine members are members of the Academy.

THE SECRETARY.—The Committee of nine went out of existence and the committee as constituted represents an Academy committee and as such they are all members of the Academy.

(A rising vote was taken and the motion was lost.)

THE PRESIDENT.—The Secretary will read two amendments to the by-laws.

THE SECRETARY.—Article III, Section 2, page 11, the words *with the exception of Region V* be deleted.

Article III, Section 4, Page 11, following the word "President," *annually* be inserted followed by a *comma*.

In the same section, page 12, top line, a *comma* be inserted after "Regional Chairmen." I move that we adopt these amendments.

(The motion was seconded and carried.)

THE PRESIDENT.—There are certain resolutions to be read.

THE SECRETARY.—The following resolutions are presented:

Be it resolved, that the American Academy of Pediatrics expresses its sincere appreciation to the local members in the Detroit area and to Dr. Edgar Martmer for the splendid cooperation in the planning and conduct of the annual

meeting held at the Book-Cadillac Hotel, January 15 through 18, 1946. The Academy especially commends the Clinic Day as an outstanding presentation.

Be it resolved, that the American Academy of Pediatrics expresses its sincere appreciation of the superior manner in which the Detroit Hotel Assocation handled the hotel registrations for the annual meeting of the Academy held January 15 through 18, 1946.

Be it resolved, that the American Academy of Pediatrics expresses its sincere appreciation for the splendid cooperation and assistance of the Detroit Convention Bureau and Mr. Carl Sedan, the Executive Secretary, in the preliminary arrangements for and during the Annual Meeting of the Academy held at the Book-Cadillac Hotel, January 15 through 18, 1946.

Be it resolved, that the American Academy of Pediatrics expresses its sincere appreciation to the management of the Book-Cadillac Hotel for the splendid cooperation of all the hotel executives as well as the employees and especially to Mr. George F. Ralston, Jr., Mr. Charles Loftis, Mr. Kurt M. Gebstadt, and Mr. John Gouci during the preparation for and the period of the Annual Meeting of the Academy, held January 15 through 18, 1946.

Be it resolved, that the American Academy of Pediatrics sincerely appreciates the courtesy of the Libby, McNeil and Libby Company, The Mennen Company, Mead Johnson and Company, and Harold H. Clapp, Inc., in providing the special events for members and their wives attending this meeting.

I move the acceptance of these resolutions.

(The motion was seconded and carried.)

THE PRESIDENT.—The report of the Nominating Committee by Dr. Joseph Henske is to be given by the Secretary.

THE SECRETARY.—The Nominating Committee has proposed Dr. Lee Forrest Hill for President-Elect and Dr. George F. Munns for Chairman of Region III.

(It was moved, seconded, and carried that the report of the Nominating Committee be accepted.)

THE PRESIDENT.—It is my great pleasure to induct into office Dr. Jay Durand as President of the Academy.

DR. DURAND.—I greatly appreciate the great honor the Academy has bestowed on me in selecting me as its president. In succeeding to this office I shall have difficulty in trying to follow such an outstanding president as we have had during the past year. I do not think I can fill his shoes, but fortunately I think I shall have to fill only one of those shoes because Dr. Wall has consented to continue to be a member of the Legislative Committee and look after the interests of the Academy in Washington. Without that assurance I would be very doubtful about carrying on in the next year in an efficient manner for the Academy.

(On motion duly made and seconded, the meeting adjourned sine die at 12:25 P.M.)

The Social Aspects of Medicine

SCATTERED IMPRESSIONS AND THOUGHTS OF A LISTENER AT THE ANNUAL SESSIONS

The first report of interest was the one by Dr. Sisson on Post-War Planning. Dr. Sisson gave an outline discussion of the program and was followed by several of his collaborators who dealt with special departments of the work. Dr. Sisson began by using a most extraordinary figure of speech: He said there had been suddenly thrust into his lap "a red-hot baby," a conception which might seem peculiar even to a most experienced cannibal. Dr. Sisson went on to state that the cost of this "red-hot baby" was to be $8,000 a year according to original estimates, but that it had now risen to $439,900 to cover a two-year period, and that both the United States Public Health Service and the Children's Bureau were making large contributions. While I was marveling at the expensiveness of this thermic prodigy, I heard Dr. Sisson confess that the true parent was Dr. John Hubbard and not himself, and that he had formally turned over the "baby" to Dr. Hubbard. The whole affair sounded mysterious and I wondered if the Academy, according to its confirmed habit, ought not to appoint another committee to investigate.

Dr. Sisson was followed finally by Dr. Hubbard himself. At the Academy dinner that evening I had the pleasure of sitting next Hubbard and inquired how soon he could finish the survey. He replied that he hoped to complete it within two years. I think that everyone felt that the survey was the only logical preliminary to the development of an adequate, wise plan for maternal and child health care, and that Dr. Hubbard was a most admirable choice to head it. I, for one, was troubled for fear that the work of the Committee would not be completed in time, since medical reform is threatening so rapidly. I hope that Hubbard can do the work in sampling fashion so that data will be available as a basis for action in case the need is suddenly forced. In reality the need for the information is "red-hot" now.

Dr. Wall's address was supposed to be the report of the Committee on Legislation but he explained at the very beginning that "to a certain extent" it reflected his own personal views. This seemed to me to be a most unfortunate error because, as the address proceeded, one was totally at a loss to know which were Dr. Wall's own particular opinions and which the views of the Committee. With that admission the "report" ceased to be a report. It can be said truthfully that the Committee did not make any report. Dr. Wall read the address from manuscript. It was written in highly literary form and contained figures of speech and quotations from the Bible and from Shakespeare. He went so far as to compare Senators Wagner and Murray and Representative Dingell to Shadrach, Meshach, and Abednego; and the Surgeon General of the United States Public Health Service, the Officials of the Children's Bureau, and the Federal Security Board to the witches in *Macbeth* peering into their boiling pot. The address was divided into a brief discussion of the Hill-Burton bill and more prolonged discussions of the Wagner-Murray-Dingell and Pepper bills. Dr. Wall expressed unqualified approval of the Hill-Burton bill, but made most scathing arraignments, full of irony, ridicule and innuendo, of the other two bills and including also the Children's Bureau. In making his points Dr. Wall went to great pains to cite specific passages and to support his statements with exact references. Obviously he had studied the legislation with great care and minuteness and from that point of view his address was a scholarly performance. In order to evaluate his criticisms, it is necessary to study them in detail with the bills in question before one. His points were often too detailed and involved to be immediately comprehensible. Many criticisms were on very small matters. Dr. Wall's accusations against the Children's Bureau (they were really insinuations) revolved around the promise of the Children's Bureau

not to continue the EMIC program (Dr. Wall suspected that the Pepper bill was merely the EMIC program disguised in new clothes) and in its failure to consult accredited Academy representatives. He closed with the quotation from the Bible, Mark 4:25: "For he that hath, to him shall be given; and he that hath not, from him shall be taken even that which he hath," saying that he had never been able to understand it until the impending bills came along, a statement difficult to take literally.

If I had been a stranger who had happened into the room by accident, I would have gained the impression from Dr. Wall that the Pepper bill was a mass of defects and did not possess a solitary virtue. Just the force of Dr. Wall's enumeration made one conclude that it had many weaknesses. But were they beyond correction? Did the bill have no redeeming qualities? I gained no idea. I should have inferred also that the Children's Bureau was a slippery organization, ambitious for power, conspiring to get control of the medical care of children and to take away the practice of Pediatrics from the Pediatricians.

When Dr. Wall concluded, he was greeted with loud, sustained applause. Evidently his address was much admired and enjoyed. At the witty passes I could see Dr. Arnold Gesell, who sat just in front of me, shaking all over with laughter, including his shoulders. However, when one considers what should have been its object, the address had serious defects. First, as already pointed out, it was so composed that no one could differentiate what was Wall and what Committee. Herein it lost much of its force. How the Committee ever allowed Dr. Wall to report himself instead of them, I cannot imagine. Second, one expected a judicial statement with good and bad pointed out, estimated and weighed against each other. Instead, the address was a summing up oration of a prosecuting criminal lawyer. I walked out of the room with Harold Root of Waterbury who, I know, does not like the Pepper bill. He turned to me with the remark, "It can't be as bad as all that." The literary furbishings all tended to make one regard the address as an ornamental piece rather than a practical utensil and its ironical insinuating tone could not help but make one feel that there might exist prejudice. Third, it was bare of anything constructive. These were the reasons, I think, why the Academy turned away from it in favor of the more constructive criticism of Butler, delivered from the floor, for their final recommendations.

I cannot allow Dr. Wall to escape the consequences of one of his figures. He compared Senators Wagner and Murray, and Representative Dingell to Shadrach, Meshach and Abednego. His words were: "This latest legislative proposal emanating from the triumvirate of Shadrach, Meshach and Abednego, reappeared on the scene from their fiery furnace where medicosocial legislation is welded. . . ." If one will turn to the book of Daniel, Chapter 3, he will find the story concerning these three men. Nebuchadnezzar made an image of gold. At the dedication he commanded that at the "sound of the cornet, flute, harp, sackbut, psaltery, dulcimer, and all kinds of musick," all should fall down and worship the golden image, Shadrach, Meshach, and Abednego declined. Therefore Nebuchadnezzar had the fiery furnace made seven times hotter than ever before and commanded that Shadrach, Meshach, and Abednego be thrown into it. In its quaint language the Bible states: "Then these men were bound in their coats, their hosen, and their hats and their other garments, and were cast into the midst of the burning fiery furnace." The heat was so great that it slew those who threw them in. When Nebuchadnezzar, a little later, looked into the furnace, he saw not three men walking around, but four and recognized at once that "the form of the fourth is like the Son of God." Nebuchadnezzar, therefore, came to the mouth of the burning fiery furnace and called Shadrach, Meshach, and Abednego to come out, addressing them as "ye servants of the most high God." On examining their bodies it was found that "the fire had no power, nor was an hair of their head singed, neither were their coats changed, nor the smell of fire had passed on them." Correctly interpreting the miracle, Nebuchadnezzar reversed himself immediately and completely, exclaiming, "Blessed be the God of Shadrach, Meshach, and Abednego, who hath sent his angel, and delivered his servants that trusted in him, and have changed the king's word, and yielded their bodies, that they might not serve nor worship any god, except their own God." Nebuchadnezzar then issued a new decree. "That every people, nation and language, which speak any thing amiss against the God of Shadrach, Meshach, and Abednego, shall be cut in pieces, and their houses shall be made a dunghill: because there

is no other God that can deliver after this sort.'' Then the king promoted Shadrach, Meshach, and Abednego in the province of Babylon. You see, Dr. Wall allied himself with the wrong side against the right side. He is now confronted logically with alternatives: Either like Nebuchadnezzar he must shift over and must now support the Wagner-Murray-Dingell bill or else he must submit to being cut in pieces and his house being made a dunghill.

Unfortunately I was called out and missed all but the last part of Dr. Sinai's paper. But that alone indicated a most scholarly presentation.

With great courtesy and thoughtfulness, Dr. Wall descended from the platform and asked Dr. Butler to speak. Dr. Butler was on crutches because of a broken leg from skiing.

I shall not make any attempt to outline Dr. Butler's remarks other than to say that he pointed out that the bill did have a good side. He then stated that he himself did not approve of the Pepper bill in its present form and offered thirteen specific criticisms. The criticisms differed from Dr. Wall's in the respect that they indicated not only where the bill was defective, but also how it could be remedied. He maintained that the Academy could not afford to ignore the Pepper bill or to disapprove it without recording its specific reasons.

Stanley Nichols, who has done much for children and has stood with strength and tact for what he thought right in the politics of his own bailiwick, advocated as the best procedure to attempt to bring together all interested groups, organized medicine, pediatrics, nursing, government organizations, organized labor, and so forth, in a grand effort to develop a scheme of medical care agreeable to all. He had been kind enough to have me to dinner the night before and had spent some time telling me his views. I think that when he spoke, he hoped I would second his proposal, and I must confess that I wished for the sake of so fine a man I could do so. But I did not believe that at the present time anything would result beyond disagreement and deadlock. Reverting to Dr. Wall's figure of the witches, I think the situation must stew some more before a solution can be obtained in that way. Proposed social legislation, such as that which confronts us, the strikes and social upheavals all around us, are making all groups think and advance, and even leaders of the American Medical Association, like Fishbein, have moved a long way from the position they occupied at the time the Government brought suit against them for trying to prevent the development of the Group Health Association in Washington, D. C.

Grulee created a surprise at the business session. He rose from his seat on the platform and announced that, although he had not thought as much as he should about the matter which he was going to present, he had not been able to sleep well for several nights on account of it. I was perplexed by this introductory remark with its obvious contradiction and was not sure what it meant at the time or afterward. The next moment he revealed his trouble; it was the same as that which Wall had disclosed in his speech of the morning. But Grulee went further than Wall to the point of suggesting, what I took to be a feeler, that he might later even be in favor of severing the Academy's support from the Children's Bureau altogether. Obviously many present approved of what Grulee said, for there was considerable applause.

The accusations or insinuations that the Pepper bill is the EMIC Program disguised and that the Children's Bureau deliberately worked a deception on the Academy are in my opinion unjust, and to hear them expressed by men of such prominence in Academy affairs was to me personally disquieting and even painful. The Children's Bureau has been a tremendous power for good in the country. No one can dispute this statement. I wish only that all other government agencies were as free from taint and directed on the same elevated plane. Much of the adverse criticism which the Bureau has received it has brought on itself by insisting on standards so high as to impose annoying and even exasperating difficulties on those carrying out its projects. If I were to wish something different in the Children's Bureau, it would be that it operated with less rigidity. But no one can impugn its high motives. I do not believe that any levelheaded member present thought for one moment of cutting loose from the Children's Bureau. Both Academy and Bureau would be greatly weakened by the separation, the Academy even more than the Bureau, for the Academy would be shorn of its great instrument of effectiveness. It is through the Children's Bureau that the Academy, when it does develop its program, can reach the country and put its ideas into execution.

The Pepper bill is not any new conception. In general plan it was already embodied in the Wagner-Murray-Dingell bills, but in its present form as a separate document the plan has been worked out and elaborated in much more detail. The central idea of getting good medical care to all mothers during the child producing and nurturing periods and to all children is just a part of the widely entertained conception of bringing adequate medical care within the reach of everybody. Really the Wagner-Murray-Dingell bills, the British Beveridge Plan, and the British White Paper are all similar in their design and aims, as a result of similarity in present-day thinking in this country and abroad, and the Pepper bill is just a fragment from this mosaic. It is really wrong to consider these proposed health legislations as the products of the minds of certain individuals, as the theory of evolution was the product of Darwin's mind, or relativity, Einstein's. Rather, they represent in concrete form the collective desires, the longings, the unfulfilled wishes, if you like, of great numbers of people, for security in regard to medical care just as for financial security. The authors of these bills, Senators Wagner, Murray, and Pepper and Representative Dingell, are the ones who possessed the social interest and the wit to perceive how general those hopes were and that the time had arrived when it might be possible to obtain realization of them by legislation. If Senator Pepper had not produced the bill which goes by his name, someone else would have done so promptly.

If Senator Pepper came to the Children's Bureau for aid on developing his bill, was the Children's Bureau bound to refuse because it had announced it would not continue the EMIC programs after the war? The EMIC program was for the wives and children of servicemen. Is the Children's Bureau bound by its statement, that it would not continue aid to the families of servicemen, never to participate in any plan to place medical care for children at the doors of all who need it? The stated aim of the Academy as quoted from the resolution adopted in 1944 is: "To make available to all mothers and children in the United States of America all essential preventive, diagnostic and curative medical services of high quality, which used in cooperation with the other services for children will make the country an ideal place for children to grow into responsible citizens." Is the Children's Bureau forbidden to participate in anything like this? If the Academy develops a nation-wide program of its own, will the Children's Bureau be prevented from sharing because of its agreement not to renew the EMIC program? In our relations with the Children's Bureau does no fault rest with us? The Children's Bureau would rather cooperate with the Academy than with any other organization. But what constructive program has the Academy ever offered in which the Children's Bureau could cooperate, save the study of the Committee on Post-War Planning, toward which the Bureau is contributing through service of its staff the equivalent of $25,900. If Grulee, instead of accusing the Children's Bureau, had pointed this out and had called for more constructive leadership, in my judgment his words would have been more serviceable. When a storm suddenly destroyed the pontoon bridge which Xerxes had had constructed across the Hellespont in his invasion of Greece, he ordered the heads of his chief engineers cut off, the water scourged and fetters thrown into it. The talk against the Children's Bureau just discussed seems to me to savour somewhat of Xerxes' thinking.

Grulee's speech brought Butler and later Helmholz to their feet in defense of the Bureau, but I shall not go into that worn-out controversy. Butler, however, in the course of his discussion, explained something which interested me very much. It was that, according to the technique of procedure in Congress, a bill is drawn up and proposed, not as a final, but rather as a trial document calculated to draw criticism and become a basis for its reconstruction and change. The Pepper bill, Butler stated, should not be considered "the final form of a bill which is to be thrust upon us." This viewpoint is of importance to us because it suggests that the Pepper bill can perhaps be remodeled into a form acceptable to the Academy. The resolution of the Executive Committee, passed at this Detroit meeting, places the Academy on record as favoring Federal aid to those unable to pay for medical services and the general aims of the Academy, as defined in the splendid resolution, already quoted, passed at the St. Louis meeting, and the general aims of the Pepper bill are identical. The fundamental points of disagreement are in methods of administration.

In the course of this discussion the comment was made by Butler that all the members of the Committee on Legislation were over 60 years of age. I am 68 years old and so can say, without danger of injury to feelings, what everyone knows, that men beyond 60 are likely to be poor leaders into new fields. Some of us are mentally so fixed as to be unable to change; some have become too nearsighted to see the superiority of new ideas; some are so timid as to fear anything which differs from past experience; some are so satisfied with the past that they can never look out through any other window; some, not being able to keep up with progress, try to hold it back; some have none of these characteristics; most of us have some of them. I hope very much that the Academy will bring youth into its leadership as soon as possible. I should like to see the young men freshly returned from the war in positions of influence because they have had the opportunity to live through new experiences and to see life and their pasts from new angles. Some years ago The Society for Clinical Investigation voted to make all members over 45 years emeritus. I was 46 at the time and remember hearing a voice behind me say: "Now for the slaughter of the swine." I was too self-conscious to look around to see the owner of the voice, but it is a comfort for me now to think that with the passage of years Circe has him, too, grunting in her pen. But the move strengthened the Society enormously. I am not advocating an age limit for Academy membership, though it might be a good plan to impose one on officers, but rather that youth be accorded its rightful influence in Academy affairs.

Dr. Wall's presidential address was a very nice, simple, straightforward summary of the accomplishment of the Academy during his year of office.

I think that everybody approved of the resolution adopted by the Executive Board with the exception that it contained no recommendation of a specific constructive nature. Dr. Roger Kennedy pointed out this deficiency and proposed that the Academy add to the resolution its objection to the Pepper bill on the basis of the thirteen points of criticism introduced by Butler which were to be included. This was noted affirmatively. I should assume from the action of the Academy that the Academy would approve of the Pepper bill, if it could be corrected to the satisfaction of the members at the points where the thirteen objections were made.

In conclusion, I make two observations: The first is to point out how splendid the discussion was. Even discussion which went off on useless side paths seemed to serve to make clearer the one which the Academy ought to follow. As the final morning wore on I think that all felt a much clearer grasp of the problems at issue. The second is to comment on the prowess of Dr. Allan Butler, who undoubtedly carried off the honors. Whether one agreed with him or not, one had to admit that he seemed to have remarkable grasp of all matters under consideration, and that he showed the ability for clear thinking and clear statement which filled many of us with envy. His was the dominating mind at the meeting. Witnessing him in action, one felt sure that the spiral fracture of the fibula did not have its counterpart in his brain.

E. A. P.

News and Notes

The following were certified by the American Board of Pediatrics at the examination held in Atlantic City in December, 1945.

Dr. Charles Abler, 55 E. 174th Street, Bronx 52, N. Y.
Dr. George Roland Alpert, 211 West 106th Street, New York 25, N. Y.
Dr. Katherine H. Anderson, 415 North Spring Street, Winston-Salem, N. C.
Dr. Marguerite E. Bagge, 636 Church Street, Evanston, Ill.
Dr. John Donald Bailey, 607 Eighth Street, Rapid City, S. D.
Dr. John B. Bartram, Green and Coulter Streets, Philadelphia, Pa.
Captain Ralph Edmond Baxter, Medical Corps, Army Air Forces Convalescent and Regional Hospital, Coral Gables, Fla.
Dr. George Bialkin, Children's Clinic, 2649 Proctor Street, Port Arthur, Texas
Dr. Emanuel B. Brandes, 4715½ Fannin Street, Houston, Texas
Dr. Amy Breyer, 436 Capitol Avenue, Hartford, Conn.
Dr. John P. Burgess, 2411 North Thirty-Eighth Street, Rock Island, Ill.
Dr. Philip S. Chasin, 11-39 Seventy-sixth Road, Forest Hills, N. Y.
Dr. Joan Neilson Daly, 108-19, Seventieth Road, Forest Hills, N. Y.
Dr. William W. Davis, Oak Hill, W. Va.
Dr. Charles P. DeFuccio, 12 Duncan Avenue, Jersey City, N. J.
Dr. Joseph Henry Di Leo, 175 East Sixty-Eighth Street, New York, N. Y.
Dr. Herman Eisenberg, 701 Kay Street, N. E., Washington 2, D. C.
Dr. Thomas Campbell Goodwin, 16 East Biddle Street, Baltimore, Md.
Dr. Werner Karl Gottstein, 2376 East Seventy-First Street, Chicago 49, Ill.
Dr. Lester J. Greenberg, 1167 Virginia Street, Far Rockaway, N. Y.
Dr. Paul Hogg, Thirty-First Street and West Avenue, Newport News, Va.
Dr. Hedwig Heda Holzer, 591 Morton Street, Dorchester, Mass.
Dr. Ruth M. Kraft, 1077 Fisher Building, Detroit 2, Mich.
Captain Philip J. Kresky, 1300 South Covell Avenue, Sioux Falls, S. D. (formerly Brooklyn N. Y.)
Dr. Harvey Deppen Leinbach, Jr., 1101 Evergreen Road, Reading, Pa.
Dr. Audrey Jane McDonald, 814 Medical Arts Building, Ft. Worth, Texas
Dr. Israel Miller, 1014 Lenox Road, Brooklyn, N. Y.
Dr. J. Leonard Moore, 107 Library Place, Princeton, N. J. (formerly Beirut, Syria)
Dr. Charles Anthony Murphy, 141 Wheller Avenue, Cranston, R. I. (formerly Stamford, Conn.)
Dr. James Joseph Quilligan, Jr., 1313 East Ann Street, Ann Arbor, Mich.
Dr. Helen Seibert Reardon, University Hospital, Ann Arbor, Mich.
Captain Edward T. Reilly, Medical Corps, 1452nd Army Air Forces Base Unit, Air Transport Command, APO 462, c/o Postmaster, Minneapolis, Minn. (formerly Brooklyn, N. Y.)
Dr. Dean Winn Roberts, 2411 North Charles Street, Baltimore, Md.
Dr. Laura Ross-Venning, 1620 Queens Road, Charlotte 4, N. C.
Dr. Robert Thornton Rutherford, Jr., 207 Doniphan Building, Alexandria, Va.
Dr. Alec Robert Schwartz, 5801 Beacon Street, Pittsburgh, Pa.
Captain Aaron Schwinger, Medical Corps, Station Hospital, Stewart Field, Newburgh, N. Y.
Dr. Walter F. Sethney, 1016 Sheridan Road, Menominee, Mich.
Dr. Christopher Harrison Snyder, 3975 Broadway, New York, N. Y.

Dr. Eleanor Robb Stein, 1516 North Second Street, Harrisburg, Pa.
Dr. Robert Hosea Trimby, 122 West Hillsdale, Lansing 15, Mich.
Dr. David William Van Gelder, 500 Reymond Building, Baton Rouge, La.
Dr. William Lucas Venning, 1620 Queens Road, Charlotte 4, N. C.
Dr. Helen Margaret Wallace, 125 Worth Street, New York, N. Y.
Captain Theresa Ting Woo, Medical Corps, Strong Residence, 1011 Seventeenth Street, N. W., Washington, D. C.
Dr. Benjamin J. Wood, 5432 Bartlett Street, Pittsburgh 17, Pa.
Dr. Paul V. Woolley, Jr., 3181 Southwest Marquam Hill Road, Portland, Ore.
Dr. Ella Zuschlag, The Mayo Clinic, Rochester, Minn.

PRECEPTORSHIPS

It has come to the attention of the **American Board of Pediatrics** from several sources that an erroneous impression is being passed around regarding preceptorships. Preceptorships *will not* be acceptable as preliminary pediatric training, but may be used as refresher work and accredited time in practice by those who have completed their preliminary training.

The publication of a new abstract journal for pediatrics, *The Quarterly Review of Pediatrics*, under the editorship of Dr. Irving J. Wolman of Philadelphia, has been announced by the publishers, The Washington Institute of Medicine. The journal will appear every four months beginning with the first issue in February, 1946.

Joe W. Savage of Charleston, W. Va., has been appointed executive director of the National Foundation for Infantile Paralysis.

Dr. Chester A. Stewart, Professor of Pediatrics and Director, Department of Pediatrics, Louisiana State University School of Medicine, New Orleans, La., died Feb. 8, 1946.

The Pediatrician and the War

Major J. Lewis Blanton of Fairmont, West Virginia, has been promoted to Lieutenant Colonel in the Army.

The following have been released from service:

Dr. Robert H. Detwiler, Arlington, Va.
Dr. Leon De Vel, Grand Rapids, Mich.
Dr. C. Barton Etter, Memphis, Tenn.
Dr. Martin A. Quirk, Red Bank, N. J.
Dr. Alvin C. Rambar, Chicago, Ill.